OVERSIGHT HEARING ON THE EFFECTIVENESS OF PROSTHETIC DEVICES AND SENSORY AIDS PROVIDED BY THE VETERANS' ADMINISTRATION

HEARING

BEFORE THE

SUBCOMMITTEE ON
HOSPITALS AND HEALTH CARE

OF THE

COMMITTEE ON VETERANS' AFFAIRS
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OVERSIGHT HEARING ON THE EFFECTIVENESS OF PROSTHETIC DEVICES AND SENSORY AIDS PROVIDED BY THE VETERANS' ADMINISTRATION

WEDNESDAY, NOVEMBER 4, 1981

House of Representatives,
Committee on Veterans' Affairs,
Subcommittee on Hospitals and Health Care,
Washington, D.C.

The subcommittee met, pursuant to notice, in room 334, Cannon House Office Building, at 9 a.m., Hon. Ronald M. Mottl (chairman of the subcommittee) presiding.

Present: Representatives Mottl, Edwards, Applegate, Edgar, Boner, Mica, Dunn, and Smith of Alabama.

OPENING STATEMENT OF CHAIRMAN MOTTL

Mr. Mottl. The Subcommittee on Hospitals and Health Care will come to order.

This morning we are conducting an oversight hearing on the effectiveness of prosthetic devices and sensory aids provided by the Veterans' Administration to eligible veterans. In addition, we hope to hear of the progress that has been made and is being made in research and development of these devices.

I would like to thank Congressman Jim Dunn for requesting this hearing. Perhaps this area has not received the attention it should have through the oversight responsibilities.

I would like to take a moment to assure veteran paraplegics that we will conduct a similar oversight hearing on spinal cord injury services and research in the second session of this Congress. The extensive witness list to be heard today did not make it feasible to combine it with today's hearing.

This morning we will hear the concerns of those veterans who are treated, fitted, and trained in the use of prosthetic devices and learn of the programs' strengths and weaknesses from the consumer viewpoint. In addition, we will hear witnesses from the Department of Medicine and Surgery of the VA and prosthetists and orthotists in the private sector who are engaged in research and development, as well as in the fitting of and training in the use of these devices. We will also hear from the national veterans service organizations to obtain their views this morning.

I would also like to recognize at this time Congressman Jim Dunn of Michigan, who has worked very hard on this hearing, and I would ask him at this time if he would like to make any remarks before the subcommittee.

STATEMENT OF HON. JIM DUNN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. DUNN. I thank the chairman.

Approximately 9 months ago, as the chairman knows, I asked him to schedule this hearing. Of course, he immediately agreed, and I would like to commend the chairman for his insight and sensitivity to the needs of the veterans across this country.

I would also like to take this opportunity to thank the veterans and the prosthetists who at my request have traveled long distances, at their own expense, to come here today to testify. This subcommittee and disabled veterans across the country owe them a debt of gratitude for their sacrifice in coming here today.

The Veterans' Administration prosthetics program is charged with a critical task, to supply disabled veterans with devices that replace missing parts of the body or parts of the body that no longer function properly. In addition, the VA oversees research designed to improve these devices and explores other matters related to the problems of veterans using these artificial devices.

The purpose of the hearing today is to find out the concerns these veterans and veteran organizations have about the VA's prosthetics program, to seek the views of independent observers of the VA's prosthetics program, and to create a dialog between these people, the members of this committee, and the VA about the present status of the programs and any improvements that may be necessary.

Our major goal here today is to be sure the veterans who are disabled in the service to their country are receiving the best service this Nation can provide.

I thank the chairman.

Mr. MOTTL. Thank you very much, Mr. Dunn.

I would like to welcome all of the witnesses this morning. It is a pleasure to have you here this morning. I would like to ask each of you to proceed and make whatever statement you desire. If you have a prepared statement, you may read it in its entirety, or summarize it as you may wish.

Mr. MOTTL. Our first witness will be Dr. Earl Brown, Jr., Deputy Assistant Chief Medical Director for Professional Services. Dr. Brown, welcome. We look forward to your statement. You can summarize it, if you so desire. And would you be kind enough at the outset to introduce your colleagues at the witness table?

STATEMENT OF D. EARL BROWN, JR., M.D., DEPUTY ASSISTANT CHIEF MEDICAL DIRECTOR FOR PROFESSIONAL SERVICES, VETERANS' ADMINISTRATION, ACCOMPANIED BY MARGARET GIANINNI, M.D., DIRECTOR, REHABILITATION ENGINEERING RESEARCH AND DEVELOPMENT PROGRAM; CHARLES H. EPPS, JR., M.D., PROFESSOR AND CHIEF OF THE DIVISION OF ORTHOPEDIC SURGERY, HOWARD UNIVERSITY; GUSTAV RUBIN, M.D., SPECIAL CLINIC TEAM, VA REHABILITATION ENGINEERING CENTER, NEW YORK; FRED DOWNS, DIRECTOR, PROSTHETIC AND SENSORY AIDS SERVICE, VA; WERNER GREENBAUM, CHIEF, PROSTHETICS AND ORTHOTICS SERVICE, VA REHABILITATION ENGINEERING CENTER, NEW YORK; FRANK COOMBS, STAFF ASSISTANT, REHABILITATION ENGINEERING RESEARCH AND DEVELOPMENT PROGRAM; JON PETERS, CHIEF, PHYSICAL THERAPY, VA CENTRAL OFFICE; AND CARLTON M. SMITH, DIRECTOR, NORTHEASTERN REGION

Dr. BROWN. Thank you, Mr. Chairman. I appreciate the opportunity to be here to discuss the Veterans' Administration's prosthetics service and prosthetic research program.

With me today, on my right, is Dr. Margaret Gianinni. She is the Director of the Rehabilitation Engineering Research and Development Program, in the VA Central Office.

I have some other experts accompanying me, Mr. Chairman, and with your permission I would like to introduce them so that the Chair will know who is present.

Mr. MOTTL. By all means.

Dr. BROWN. First is Dr. Charles Epps, Jr., professor and chief of the Division of Orthopedic Surgery at Howard University, and the chief of juvenile amputee clinic, maternal and child health, at D.C. General Hospital. Dr. Epps is a consultant to the VA Medical Center, but he is outside the VA system and I asked him to come because he will be an expert on whom you can call with specific technical questions. He has quite a curriculum vitae and has academic appointments at Johns Hopkins as an orthopedic surgeon, and he also has an academic appointment at the School of Orthoses and Prostheses at Northwestern University.

Also accompanying me are Mr. Carlton Smith, who is the Director of the Northeast Region, Veterans Administration; Dr. Gustav Rubin, who is from the special clinic team at the VA Rehabilitation Engineering Center in New York; Mr. Fred Downs, the Director of Prosthetic and Sensory Aids Service at the VA Central Office; Mr. Werner Greenbaum, Chief, Prosthetics and Orthotics Service, at the VA Rehabilitation Engineering Center in New York; Mr. Frank Coombs, staff assistant in the rehabilitation engineering research and development program, again from Central Office; and Mr. Jon Peters, Chief, physical therapy, from Central Office.

Mr. Chairman, with your permission, I would like to summarize my formal testimony and have the full text entered into the record.

Mr. MOTTL. By all means. Your entire statement will be submitted into the record without objection.[1]

Dr. BROWN. Thank you, sir.

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[1] See p. 69.

The prosthetic research program in the Veterans' Administration was created at the end of World War II as an adjunct to the clinical delivery of prosthetic services. The VA's accomplishments from 1948 to 1962 essentially transformed the field of prosthetics. I would refer you to my formal statement for a list of those developments which had such an impact on the prosthetic field, rather than reading them in my summary statement.

Equally significant advances were being made in a concurrent program in the education of prosthetists. In this active period from 1948 to 1962 the VA prepared classic texts, applications manuals, training guides, training films and slides, and training courses for prosthetists and physicians on a nationwide basis.

As planned, these educational and training programs had a marked impact on the clinical delivery of prosthetic services. Artificial limbs could not be fitted to a veteran unless the prosthetist had a VA qualification status as provided by the training courses. Thus, the VA was simultaneously developing excellent new prosthetic devices and training prosthetists in new techniques. These techniques have been taught to many physicians and prosthetists in other countries and are now utilized throughout the world.

In the period from 1963 to 1973 there were also major accomplishments, and again I will refer to my formal statement for a list of those accomplishments rather than giving the historical background.

The devices developed in the period from 1973 to 1980 were largely refinements of existing devices. The swing-and-stance knee became commercially available; light-weight polypropylene artificial legs for elderly amputees were introduced; the improved four-bar knee and the hydraulic ankle entered the final phase of clinical evaluation; and the six-bar knee mechanism for knee disarticulation amputees was developed.

Prosthetics R. & D. in fiscal year 1981-82 include multiple noninvasive techniques to assess the peripheral circulation in vascular disease to determine the need for or level of amputation; and a new prosthetic foot that utilizes a heel-to-toe leaf spring to replace the solid metal keel, thus providing toe lift. At the VA medical centers in Seattle, Tucson, and Castle Point, N.Y., various diagnostic studies are being evaluated and perfected, such as the laser doppler technique, the transcutaneous oxygen technique, the xenon 133 method of blood flow measurement, and ultrasonic doppler techniques.

Most amputations today are due to blood circulation problems in diseases such as diabetes and arteriosclerosis. New techniques and noninvasive diagnostic methods cited above have permitted early diagnosis of peripheral vascular diseases. This results in more patients being treated medically, avoiding the necessity of amputation. For those who must have amputation, the new techniques allow the surgeon to determine the most distal amputation site. This improves prosthetic acceptance, recuperation, and rehabilitation. In fiscal year 1980 in the Veterans' Administration, there were 4,938 lower extremity amputations, and 64 upper extremity amputations.

Following an amputation, the veteran is enrolled in a physical therapy program of preprosthetic training to develop strength and stamina. He is also referred to the prosthetic clinic team. This team consists of a physician director, other physicians with knowledge and interest in this area, a prosthetist, a physical therapist, and a prosthetic representative. The team examines, evaluates, and prescribes an appropriate training limb. The veteran then has a 2- to 3-week training period by a physical therapist in the use of his training prosthesis.

Following discharge from the hospital, the veteran is followed by the prosthetic clinic team for 1 year, or longer if required. After the veteran exhibits full use of the training prosthesis, and the stump has obtained maximum shrinkage, a permanent prosthesis is prescribed.

The prosthesis is obtained from a local commercial VA-approved contractor. After the veteran receives his prosthesis, the prosthetic clinic team evaluates the prosthesis, makes adjustments, and recommends additional training if necessary.

The prosthetic clinic team also evaluates eligible outpatients requiring artificial limbs. New developments are discussed with the veteran outpatient and a prescription is developed. Additional followup and training are provided as necessary.

Our present procedures for the treatment of both inpatients and outpatients work well for most amputees. Our current replacement rate indicates most veterans are using the same prosthesis for 4 to 5 years. However, a number of patients have difficulty adjusting to an artificial limb due to the general physical condition, mental outlook, age, stump changes, phantom sensations, weight-bearing pressure on soft tissue, and the unaccustomed weight of a prosthesis. These problems are usually treated successfully locally. Especially complicated cases are referred to the Veterans' Administration Rehabilitation Engineering Center in New York, or such centers as the Prosthetic Research Center in Seattle, Wash.

The VA's Research and Development Service, specifically Rehabilitation Engineering and Health Service, are to initiate an evaluation of the methods used by the Institute for the Advancement of Prosthetics and those used throughout the industry. If the study reveals improved prosthetic designs or fitting techniques, we will take whatever steps are necessary to provide improved services to veterans.

In the rapidly developing field of prosthetics, it is important to keep our personnel in the VA informed of the latest developments. The VA Rehabilitation Engineering Center in New York monitors what is occurring in the field of prosthetics, and shares the information with VA personnel by means of a quarterly publication. Additionally, the VA's Bulletin of Prosthetic Research is the only journal devoted entirely to the publication of scientific and technical papers in the field of rehabilitation engineering. The Prosthetic and Sensory Aids Service at VA Central Office also distributes newsletters and other publications to update our personnel. The VA's sponsorship of numerous seminars, workshops, and professional meetings adds another dimension to this effort to continually educate our personnel and share information with professionals outside the Veterans' Administration.

Mr. Chairman, that concludes my summary statement.

Mr. MOTTL. Thank you very much, Dr. Brown.

The Chair will invoke the 5-minute rule, and we will have those green and red lights to assure that everybody complies. I will enforce it strictly this morning, and then we can continue a second round if the committee so desires. But this will give everybody a fair chance to offer questions to the witnesses this morning.

First of all, Dr. Brown, how does the Veterans' Administration assure the quality of care especially in regard to amputees?

Dr. BROWN. Well, Mr. Chairman, we have many checks and balances in the system. First of all, only qualified physicians are hired as staff. These physicians are then credentialed according to their experience and training, and they are allowed to perform only those procedures that they are qualified to perform.

In addition, at least monthly—and in larger hospitals weekly—morbidity and mortality conferences are held where complications are reported and discussed, and these reports are sent to the VA Central Office. I will deal with what we do with them in just a moment.

We have periodic, systematic internal reviews which are conducted by the staff of each medical center. In addition, teams from the VA Central Office perform systematic external reviews. We also encourage continuing medical education and continuing certification of all our professionals. The Central Office sponsors educational workshops, amputation workshops, and in addition, I chair the Quality of Care Assessment Committee in the VA Central Office where all of the reports of all the audits, things that I have just mentioned, are reviewed. And if action is indicated, we take appropriate action.

We also have patient satisfaction surveys, which are conducted annually, and we pay attention to what the patients say.

In addition to this, the prosthetic clinic team that I have already described exercises a very important quality of care on prosthetic prescriptions and amputees.

Mr. MOTTL. Thank you very much, Dr. Brown.

The National Academy of Science report of 1976 concluded that the prosthetic research projects that were reviewed were not being effectively directed to patient needs. What has the Veterans' Administration done to correct this situation?

Dr. BROWN. I would like to ask Dr. Gianinni to answer that, if I may.

Dr. GIANINNI. The VA prosthetic research program was reorganized in 1977 following the final report by the National Academy of Sciences Committee on Prosthetic Research. The program reviewed by the committee was largely an extramural or contract program. The R.E.R. & D. Service, which now has the responsibility for the prosthetic research program, instituted a plan to convert the entire prosthetic research program to an intramural program.

The plan was, and still is, to stimulate VA clinicians to submit proposals to conduct R. & D. on the problems they encounter in the clinical delivery of prosthetic services. In this manner, the physician studies problems relative to him and his patients in the VA, and the results of such studies are immediately applied to clinical practice. Concurrently, the R.E.R. & D. program instituted a VA Scientific Evaluation and Merit Review Board to supersede the National Academy of Science's review process.

The R.E.R. & D. Merit Review Board has set high standards for research design and methodology so that we can have an impact as applied research on clinical services. This Board has reviewed all the projects funded by the R.E.R. & D. Service. The Board has approved only one out of three proposals submitted to it. There are only five projects, however, that have been funded by the R.E.R. & D. prior to 1977, prior to reorganization. Each of these projects is a cooperative project centered in the VAMC, and an additional monitoring and quality control procedure, the local VAMC, has an R. & D. committee and a human studies committee which reviews all R. & D. proposals at the VAMC and monitors the progress of the project.

This informs other clinicians of the current progress in R. & D., so that they, too, may benefit from the knowledge gained. In this manner, the results of the R.E.R. & D. program are continuously fed back into the clinical community to improve the delivery of prosthetic services.

Twenty of the thirty-three projects in the prosthetic amputation area are in the patient evaluation phase, so that 60 percent of the present R. & D. has devices or techniques presently being evaluated with VA patients in VA facilities.

Mr. MOTTL. Thank you very much, Dr. Gianinni.

The Chair will recognize the gentleman from Michigan for any questions proffered to the witnesses.

Mr. DUNN. Thank you, Mr. Chairman.

Dr. Brown, in your personal—and I underline the word "personal"—opinion, are you satisfied that all the various elements of the VA's prosthetics program, the R.E.R. & D., VAREC, evaluation of patient service, and and so forth, are they working closely together?

Dr. BROWN. Mr. Dunn, I think someone who is charged with the monitoring of quality of care in the Veterans' Administration should never be completely satisfied with anything. As stated previously, I chair the Quality of Care Assessment Committee in Central Office. We are continually trying to upgrade and improve the quality of care that is provided. I am convinced that we give excellent care and that most of our patients are receiving excellent quality care. But no, I am never satisifed with it.

Mr. DUNN. The chairman referred to the 1976 study. One of the people who wrote that was a Dr. Akeson. He recently wrote to me and he said—and I quote. He is talking about 1981.

> Coherence of direction of the program is needed. VAREC runs as an independent fiefdom with inadequate peer review. The program within the VA hospitals are not sufficiently responsive to patient needs. The problem in this case is less a matter of money than it is of ineptitude.

Dr. Brown, do you personally believe that the Washington VA is in close touch with the day-to-day operations of VAREC?

Dr. BROWN. Yes, I do.

Mr. DUNN. Mr. Fred Downs, the Director of the Prosthetics Services, is he with you today?

Dr. BROWN. Yes, he is.

Mr. DUNN. Could I ask him a couple of questions?

Dr. BROWN. Surely.

Mr. **Dunn**. How much education, Mr. Downs, have you provided for your prosthetic representatives in the last 7 or 8 years?

Mr. **Downs**. I have done an analysis of the training provided. Last year, in 1981, we provided education training courses for 11 restoration technicians and 6 prosthetic representative trainees.

We also did an analysis of the education provided during the last 5 years to both prosthetic personnel.

Mr. **Dunn**. You what?

Mr. **Downs**. I have an analysis only for the 5 previous years. I have this information here, if you will give me a second, please.

During the last 5 years, 28 percent of the orthotists/prosthetists who responded to the survey received no technical courses.

Mr. **Dunn**. Twenty-eight percent of the people received no technical courses?

Mr. **Downs**. Also in those 5 years, 15 percent received one technical course.

Mr. **Dunn**. Doesn't that contradict what Dr. Brown just said about continued improvement in the service?

Mr. **Downs**. I think this has to be put in perspective. One of the reasons that we have this training information here today is that Dr. Brown and I started working on the problems that were in prosthetics. We did an analysis of some of the problems which we felt might be there. I think this is an indication of our concern for trying to improve the system.

We are now working on programs so that in the future we will be able to rectify some of these problems. I don't think it in any way refutes what Dr. Brown said. Dr. Brown is entirely correct, in that the different hospitals have continuing education programs and the Veterans' Administration is always trying to improve their educational program.

Mr. **Dunn**. One more question.

Do you perceive differences in quality of treatment provided to vets and nonvet amputees?

Mr. **Downs**. Specifically, what do you mean?

Mr. **Dunn**. Quality of care.

Mr. **Downs**. The Veterans' Administration prides itself on providing the best quality care nationwide and compare favorably with any other health care system in the United States.

Mr. **Dunn**. I thank you.

Mr. **Mottl**. Thank you very much, Mr. Dunn.

The gentleman from Pennsylvania, Mr. Edgar.

Mr. **Edgar**. Thank you, Mr. Chairman.

I have a couple of questions that I think will be very specific and won't need too long of an explanation.

Doctor, what is your current budget situation with respect to research in the prosthetic field, and what would be the impact of the September budget reductions proposed by the President on your program?

Dr. **Gianinni**. Our present budget for prosthetics and orthotics is $2,780,000.

Regarding the second part of your question, we have serious concerns about the impact of the reductions in the budget. We may not be able to proceed with new research projects if we have to take a considerable reduction in our research budget. Our program includes sensory aids and the manipulative environmental controls and other decisions in addition to prosthetics and orthotics.

However, the Rehabilitative Engineering Research and Development Service does emphasize and concentrate a great deal in the prosthetics area.

Mr. EDGAR. Do you think that the budget reductions will mean a reduction of staff and personnel?

Dr. GIANINNI. In the field?

Mr. EDGAR. Yes.

Dr. GIANINNI. Oh, yes, indeed. I think it will.

Mr. EDGAR. To what extent; 5 percent, 10 percent?

Dr. GIANINNI. I am not prepared to answer your question specifically, but I would like to answer in another way. The reductions will have a serious effect on the types of people that are doing sophisticated research in the field. It is difficult to develop and sustain personnel doing research in this field. If we have to reduce our research projects, we will lose an important part of the manpower pool which would take a number of years to replace.

Mr. EDGAR. The VA once had a reputation of being the leader in this particular field of medicine and the prosthetic field, and every Government agency and foreign governments looked to the VA with a great deal of respect as to what you were doing.

Do you think the VA still has this high reputation?

Dr. GIANINNI. Yes, I do. I think that one must consider and remember that a great deal has been accomplished in a very short period of time. Research is very time consuming. As we have moved from the initial needs of research in the traumatic area, we learned that there are many other considerations that had to be dealt with in order to achieve excellence. By that I mean we had to consider new ways in diagnostic procedures, surgical procedures, and more studies on internal joints, and not just prosthesis alone. All these are parts that made up the sum of the total picture, as the needs changed. As the traumatic phase had its plateaus and its dips, we found that the aging veteran had other kinds of problems in peripheral vascular disease. So that presented us with other considerations that we had to study.

Therefore, to come back to your question, yes, I think we have many achievements that we can be proud of. We have transferred a great deal of technology. As in all cases of research, perhaps we haven't transferred as much as we would have liked to.

Mr. EDGAR. Was it true that the 1976 report of the National Academy of Sciences was very critical of several aspects of the VA prosthetic program, and if so, how is the program today different in the respects of those criticisms?

Dr. GIANINNI. Prior to the report, most of the direction and how the VA conducted its research was done by the NAS and NRC, the National Academy of Sciences and the National Research Council, in terms of recommendations, priorities and so forth.

After that report, I think a great deal of attention was given to change. That is when the total direction of the R. & D. program took place. This is the time that the division of responsibilities occurred. There was a division of research and development services, prosthetic, education, and prosthetics and sensory aids service. It was also the impetus to create the merit review system, which is very important in order to achieve scientific excellence in whatever research that we do.

So, in a few words, many changes took place as a result of that report.

Mr. MOTTL. Thank you, Mr. Edgar.

Mr. EDGAR. Mr. Chairman, if I could ask unanimous consent, I just have one request—and not a question of the witness.

I wonder if the witnesses would provide for the record some specific data on personnel losses as a result of the reduction of funding in your area.

Thank you, Mr. Chairman.

Mr. MOTTL. Dr. Brown, would you supply that for the record, then, for us?

Dr. BROWN. Yes, Mr. Chairman, we will do that.

Mr. MOTTL. All right. The record will be held open, and hopefully it can be submitted in the very near future.

[Subsequently, the Veterans' Administration furnished the following information:]

The Rehabilitative Engineering Research and Development Program (RER&D) will experience a reduction in budget availability from $8,794,000 in fiscal year 1981 to $7,066,000 in fiscal year 1982. This represents a budget reduction of 20-percent. There will be a corresponding personnel reduction from the fiscal year 1981 allocation of 143 FTEE to the fiscal year 1982 allocation of 115 FTEE. This represents a personnel reduction of 20 percent. These budget and personnel reductions have required a reduction in the number of R&D project supported by the RER&D Service. For example, the RER&D Service supported 85 projects at 37 VA medical centers in fiscal year 1981, while the reduction of the fiscal year 1982 budget will only allow the support of 58 projects at 32 VA medical centers.

The RER&D Service has imposed a hiring freeze and expects that attrition caused by the unstable R&D environment will quickly reduce the personnel to the new allocation. In addition, the RER&D Service has announced to the field a number of policy changes with regard to phasing out projects more quickly and restrictions on the qualifications for initiating new projects. It is unlikely that the RER&D Service will fund any new projects in fiscal year 1982. There are two reasons for this inability to support any new projects in fiscal year 1982; first, the support of the continuing R&D projects will require committing all of the available resources; and second, there will be no personnel allocation available for new projects even if further economy of operation produced uncommitted money. In fact, there may be a further reduction in the number of supported projects because a project with committed funds may not have the personnel allocation to conduct the study. It is expected that some adjustment of both funds and personnel will be necessary for the most efficient operation. This adjustment will take place after the personnel allocation has been reduced to the fiscal year 1982 total.

Mr. MOTTL. Next the Chair will recognize the gentleman from Alabama, Mr. Smith, for any questions of the witness.

Mr. SMITH. Thank you, Mr. Chairman.

I have several questions I would like to ask, Dr. Brown, that you or other members of the panel may want to address.

What goes on at your VA Rehabilitation Engineering Center in New York?

Dr. BROWN. I would like to read the task of that particular facility, if I may.

The VA Rehabilitation Engineering Center in New York oversees the development, evaluation, testing and dissemination of advanced technology for the seriously disabled. These include multiple amputees, paraplegics, quadraplegics, and the blind. They also provide specialized orthotic services to veterans referred from across the country. They operate a program for the centralization and distribution of orthopedic shoes, hydraulic knee mechanisms for artificial limbs, externally-powered upper extremity components, and other selected orthopedic components. They also have an educational responsibility to monitor what is happening in the field and communicate with the field, with the workers, as to what is occurring in the field of orthosis and prosthesis.

Mr. SMITH. How much of your activity is concerned with service-connected veterans?

Dr. BROWN. Let me ask Mr. Downs to respond.

Mr. DOWNS. The answer to that for prosthetic and sensory aids service, of which I am the director, is almost a 60–40 split, 60 percent nonservice connected and 40 percent service connected.

Referring to the previous question of what the breakdown is at VAREC, I am not familiar with that.

Mr. SMITH. Can you tell us of any recent breakthroughs that have been made in prosthetics in your research program?

Dr. GIANINNI. By how recent?

Mr. SMITH. Since 1976.

Dr. GIANINNI. Actually, not as a new breakthrough, but the refinement of many of our research projects that were ongoing had developed. For instance, the four-bar linkage knee joint has developed into a better prosthesis, and there is also the six-bar linkage prosthetic knee. Many areas of locomotion and mobility have been improved in wheelchair research.

So basically progress has been in refinements rather than many new breakthrough since 1976.

Mr. SMITH. How much, Dr. Brown, of your activity is contracted out to the private sector, say since 1976?

Dr. BROWN. Are you talking about in the prosthetic area?

Mr. SMITH. Yes.

Mr. DOWNS. In the phase of it which deals with building the prosthetic limb, we have about 405 contracts with private shop-owners across the United States. If you're talking about the R. & D. part of it, then Dr. Gianinni can answer that for you.

Mr. SMITH. Do you monitor the quality of this equipment when it comes in and take corrective actions if they are not living up to their contracts?

Dr. BROWN. Yes, sir, we do. There are a number of checks and balances on that system as well. First of all, all contractors must have a VA qualified prosthetist as a full-time employee. This is monitored annually to insure that they have such a trained individual.

In addition, the prosthetic representative monitors the performance of the contractors and what they produce as far as artificial limbs are concerned. The prosthetic clinic team—which usually consists of an orthopedic surgeon or a physician who is interested particularly in the prosthetic field, a prosthetist, a physical therapist and a prosthetic rep—monitors each patient as they are prescribed and as they receive their limb from the contractor. They make adjustments. If the limb is unsatisfactory, they send it back and, without cost to the Government, it has to be remade by the contractor. They monitor to insure that the quality of the product that is provided by our contractors is indeed what they should be.

Mr. MOTTL. Mr. Smith, excuse me, but we are going to adhere to the 5-minute rule. We'll come back to you in a second round, OK?

Next we will hear from the gentleman from Tennessee, Mr. Boner. Do you have any questions of the panel?

Mr. BONER. Yes, one.

I believe you were asked by Mr. Edgar "Did the National Academy of Science's report in 1976 make some very critical comments about the prosthetic service of the Veterans' Administration"; is that right?

Dr. GIANINNI. Yes, there were some critical comments that were made in that report.

Mr. BONER. And you feel that that situation has improved, though, since that time?

Dr. GIANINNI. Yes, I do.

I think I can also answer that by describing how the VA met that criticism. There was obviously a serious need to fill the gap between research engineers and clinicians. The line of communication should be open, and be a dynamic one. As a result of that committee's report, several research engineering centers were created to have research engineers and clinicians work together on a daily basis, and on a core area, to meet the unmet needs of disabled veterans.

In addition, a number of affiliations were made between VA medical centers and universities and schools of engineering, to continue that effort and to encourage the development of rehabilitative engineers who would work very closely with physicians and clinicians within the VA system.

Mr. BONER. But as was stated, I believe, and from what Mr. Downs said, even at that point in the last 5 years there has been 28 percent that received no education and 15 percent have only received one course during this time; is that correct, Mr. Downs?

Mr. DOWNS. Yes, sir, among my chiefs who answered my needs assessment.

I have been Director of the Service for a year, and at the request of Dr. Custis, have been looking into the problems of the Service. As I stated earlier, one of the problems that I saw was this lack of education. Last year we were able to provide some training for our people. Eleven restoration technicians and six prosthetic rep trainees were provided training in fiscal year 1981.

Mr. BONER. Dr. Brown, do you feel that in this particular area you have an adequate equipment accountability?

Mr. DOWNS. I will have to ask for clarification of what you mean by equipment accountability.

Mr. BONER. Well, I understand the Inspector General has conducted an audit and it seems there is almost a million dollars worth of inventory at VAREC that is unaccounted for. Is that accurate?

Dr. BROWN. Mr. Boner, we do not have that report. My understanding is that the audit is still going on and that they have not reported to the VA Central Office or to the Administrator. So we really are unfamiliar with the——

Mr. BONER. I am aware of that, but would you say—and that's my question. Obviously you are familiar with it and you are not totally ignorant that there has been an audit and the rumors are flourishing that this is going on.

I guess my question is, in your opinion, of either you, Mr. Downs, or you, Dr. Brown, if we have $10 million worth of inventory, do we have an adequate accountability system for our inventory when we are hearing rumors to the effect that almost $1 million of that equipment is unaccounted for? Do you feel that figure would be erroneous? What can you say to the accountability of our inventory in that area?

Dr. **Brown**. I think that the accountability of our inventory throughout the VA system is good. That report deals strictly with the VA Rehabilitation Engineering Center in New York. I simply cannot answer until I see the final results of the audit in regard to VAREC.

Mr. **Mottl**. Thank you very much, Mr. Boner.

The gentleman from Ohio, Mr. Applegate.

Mr. **Applegate**. Thank you, Mr. Chairman. I have just a couple of quick questions.

How much of what you do in your activity is contracted out to the private sector?

Dr. **Brown**. You mean specifically in the prosthetic field?

Mr. **Applegate**. Rehab, prosthetic.

Dr. **Brown**. We could take several approaches. Most of the training limbs are made in-house by VA personnel. Practically all of the permanent limbs are made by contract. We have information such as how much we spent on them if you wish us to provide that information.

Mr. **Applegate**. Yes, that would be good.

[Subsequently, the Veterans' Administration furnished the following information:]

During fiscal year 1981, VA personnel fabricated 3,018 temporary limbs. In that same year, private contractors fabricated 8,838 permanent limbs at a cost to the VA of $9,214,912.

Mr. **Applegate**. What kind of oversight do you have over there? What kind of quality control procedures do you have with respect to the private contractors?

Dr. **Brown**. I think the control procedures are good. We require that they have a VA qualified prosthetist full time employed with the company before we ever approve a contract with the company.

In addition, we inspect the facility to insure that they have adequate machinery, we look at their products to see if they are able to produce what they contracted to produce. We insure that they have accessibility for the disabled—for example, that a wheelchair can get into the facility. So prior to contracting we have a number of checks and balances in that regard.

After the contract, it is primarily up to the prosthetic clinic team to evaluate the product for each veteran patient and to insure that it fulfills the requirements.

Mr. **Applegate**. So you purchase from the private sector, so to speak, in prosthetic?

Dr. **Brown**. That's correct.

Mr. **Applegate**. How about your rehabilitation, your services in rehabilitation and that type of thing? Is this in-house?

Dr. **Brown**. The rehabilitation is in-house; yes, sir.

Mr. **Applegate**. Is it all in-house or do you contract any of that out?

Dr. **Brown**. Well, it is not really a contract. We have a number of consultants who are hired to assist us with specialized programs. For example, Dr. Burgess in Seattle is a well-recognized expert in this field. He has a contract with the Veterans' Administration to assist us with our specialized clinic there. But that is a contract for him specifically and his clinical services. But still, our rehabilitation is performed in-house.

Mr. **Applegate**. One more question, Mr. Chairman.

Once a veteran is fitted with a prosthetic device, what kind of a patient followup is there? Is it an automatic thing? You know, we, as Congressmen, get a lot of complaints in various areas. Is this what a veteran has to do, or is it something that is just automatic? Do you follow through?

Dr. **Brown**. It is an individual prescription all the way. Again, this prescription is by the prosthetic clinic team, which consists of a number of specialists, which I have cited previously.

They follow each veteran, and usually after they are discharged from the hospital, after they recuperate to that extent, the average followup is 1 year. But again, it is an individual prescription. If they need to be followed longer than that, they are.

Mr. **Applegate**. So there is no automatic——

Dr. **Brown**. No, sir.

Mr. **Applegate**. In other words, the veteran takes the initiative to come back?

Dr. **Brown**. No, he is rescheduled. The clinic team follows him and tries to insure he is seen as frequently as he needs to be.

In addition, we have other specialists who oversee certain aspects of rehabilitation. The veteran will have an appointment with the physical therapist, for example, to continue to strengthen and help him use his prosthesis. It is not just with the team itself but with individual members, too. Vocational rehabilitation, is another example: We employ a case manager system which oversees the eligible veteran's vocational rehabilitation.

There are a lot of players, a lot of professionals who take a part in the total rehabilitation. With each one, there is an individual prescription. That professional will do what is necessary for the veteran.

Mr. **Applegate**. Thank you very much, doctor.

Mr. **Mottl**. The Chair will now recognize the gentleman from California, Mr. Edwards.

Mr. **Edwards**. I have no questions, Mr. Chairman.

Mr. **Mottl**. Thank you very much, Mr. Edwards.

Dr. Brown, why can't the veterans get a prosthesis quickly?

Dr. **Brown**. Well, Mr. Chairman, there is a waiting time. The average I understand is about 5 weeks. There are many reasons for this. First of all, the time required for the amputee appointment for the initial casting. In addition, there is a time requirement for the fabrication of the prosthesis. Most of the contractors are one-to-four-person facilities, so it is not big business we are talking about. These are small businesses which have to meet their workload according to their individual problems and how many personnel they have available for the work.

In addition, the amputee is scheduled for followup visits. There are occasions, of course, when the appointment schedule is such that he cannot return except by a certain time frame. It has to work within his schedule if he is busy with other things.

Mr. **Mottl**. Dr. Brown, how long is the waiting period before the veteran receives the prosthesis?

Dr. **Brown**. Approximately 5 weeks, sir.

Mr. **Mottl**. Does it ever run longer than that?

Dr. **Brown**. Yes, sir, I am sure that in many cases it does, particularly in especially complicated cases.

Mr. **Mottl**. Do you think you need more manpower to shorten this time period?

Dr. **Brown**. Well, certainly more manpower would shorten the time period. But I believe the increased costs for additional manpower in this area would not achieve that much of an increase—or the reduction of the time period it takes for the development of a prosthesis.

Mr. **Mottl**. Thank you very much, Dr. Brown.

The gentleman from Michigan.

Mr. **Dunn**. Just one question. I am a little confused. When I asked you the question before, Dr. Brown, did you believe Washington VA is in close touch with the day-to-day operations of VAREC to the point you would like to see it, and you said yes. One of the other gentlemen asked the question have we made some changes since 1976 and the answer was yes.

And yet I'm confused because you're in this close contact but you can't tell us anything about $1 or $2 million worth of missing inventory out of a $10 million inventory. Can you straighten out that confusion in my mind?

Dr. **Brown**. Mr. Dunn, first of all, I don't know that that's true. I have not seen the report. I don't know what——

Mr. **Dunn**. Can you state unequivocally that there is not a missing million dollars?

Dr. **Brown**. I cannot.

Mr. **Dunn**. And yet you are on a day-to-day basis in contact with them, what you said in your testimony.

Dr. **Brown**. A day-to-day professional basis, certainly.

Mr. **Dunn**. A million dollars isn't professional?

Dr. **Brown**. Mr. Dunn, I think that's an unanswerable question.

Mr. **Dunn**. Thank you.

Mr. **Mottl**. Thank you very much, Mr. Dunn.

The gentleman from Pennsylvania, Mr. Edgar.

Mr. **Edgar**. I will pass on the questions, Mr. Chairman.

Mr. **Mottl**. Thank you, Mr. Edgar.

The gentleman from Alabama, Mr. Smith.

Mr. **Smith**. Thank you, Mr. Chairman.

A further question I had in talking about contracting. Does the contract with these 70 or 80 prime contractors permit them to subcontract on building prosthetic devices?

Mr. **Downs**. We have about 405 contracts and each one is individual. They are not allowed to subcontract. That is one of the checks that our prosthetic reps look for when they evaluate the contract and when they go out and look——

Mr. **Smith**. You feel you can maintain the quality of the device, since it is a reputable contractor that the contract has been entered into with, and to maintain quality and that these devices will do the best job for the veterans.

Mr. **Downs**. If they have a certified prosthetist/orthotist, then we accept that as being valid for the contract. The certification comes from, in most cases, the private sector, and their certification procedures are something that we feel are valid. So we feel the quality is there.

Mr. **Smith**. Thank you.

Thank you, Mr. Chairman.

Mr. **Mottl**. Thank you very much, Mr. Smith.

The gentleman from Pennsylvania does have one question. Mr. Edgar.

Mr. **Edgar**. Mr. Chairman, in followup to a question that was asked by Mr. Applegate, I would like to focus on the issue of contracting out.

I have a constituent who was going to testify this morning but was unable to. In his testimony, which I will submit for the record at the appropriate point,[1] he says that in 1979 he was tired of getting poor results from a local prosthetic shop and he went to a new shop. He was fitted with a new leg in February or March of 1979. He waited for that leg to be completed, with no response. His wife and he attempted to find out the cause of the delay, and the shop itself claimed that it had sent the leg to the VA. It turned out that the unfinished leg was discovered in the corner of the prosthetic shop, and it seems that none of the employees knew it was there, or that one of the employees had quit.

It brings me to the question of what kind of monitoring goes on with the contractors, those shops that you contract out with? How often are the contracts reviewed and who looks at the efficiency reports about the activity in those shops?

Dr. **Brown**. The contracts are reviewed yearly, and the efficiency is monitored by several people. The prosthetic representative is one who maintains this type of liaison with the contractor. The prosthetic clinic team—if this individual was working through a prosthetic clinic team—should have been very much aware of the time schedule and the fact that the leg was not produced in the appropriate period of time and should have followed through on it.

So my question in that particular case was, was he working with the VA system as set up, with the prosthetic clinic team?

Mr. **Edgar**. Well, he claims that he was, and he claims that it took 7 months in order to get accurately fitted with his leg because of the foul-up of this particular shop. It is just one example. I think the question basically is whether or not the monitoring of the contracting out is sufficient to give you enough data as to whether or not the groups that you are contracting out with are adequately fulfilling their obligations of the contract.

Dr. **Brown**. Yes, sir. I do feel there are adequate checks and balances on the system if they are utilized. Of course, we are dealing with people and people aren't always consistent.

Mr. **Edgar**. If there was a case like this occurring in your area, what would you suggest to this particular constituent?

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[1] See p. 75.

Dr. Brown. I would suggest that he go to the nearest VA medical center and talk to the prosthetic representative and obtain direction from that individual.

Mr. Edgar. Thank you

Mr. Mottl. Thank you very much, Mr. Edgar.

The gentleman from Tennessee, Mr. Boner.

Mr. Boner. Dr. Brown, who is responsible for the purchasing of equipment and inventory at VAREC?

Dr. Brown. I don't know the answer to that question, Mr. Boner.

Mr. Boner. Who would be responsible for keeping up with the inventory that VAREC purchases?

Dr. Brown. It would be the responsibility of the personnel at VAREC.

Mr. Boner. Is there any one position, is there a controller over there, anyone who has the obligation to oversee the purchase of these items?

Dr. Brown. Mr. Boner, may I ask Mr. Carlton Smith to come up? He may have more information.

Mr. Smith is the director of the northeast region and has direct line authority over the VAREC.

Mr. Carlton Smith. Yes, sir. The first responsibility that we would look at would be the director of the VAREC who should install systems that would insure accountability of the inventories and the equipment. There are supply and contract specialists on the staff of the VAREC who would have the immediate responsibility for inventory control.

Mr. Boner. Obviously you are aware we have indications that someone in this audit that is going on says there is almost 1.8 typewriters for each secretary. Is there any validity to that?

Mr. Carlton Smith. I couldn't answer the question. I have not seen the results of the audit. I would just like to comment that the audit was conducted with the full knowledge of my office, with the support of my office, and with our desire to get as accurate as possible a reading as we could on the effectiveness of management capability at that particular facility.

Mr. Boner. What do you think the effectiveness of the management at that facility is?

Mr. Carlton Smith. I think there are serious questions that have to be addressed and they need to be addressed at the point in time when we have detailed, in-depth information that the audit report will give us. We have not yet had the feedback, but I think it will raise issues about management systems and controls that we will have to correct.

Mr. Boner. Do you feel that perhaps you all do not have right now a system established that can accurately give you an accountability of the inventory that you have?

Mr. Carlton Smith. I can't speak in depth to the quality of that system, but that is one of the very basic purposes of the audit that was done, to review those systems and get back to us the line managers, the in depth information.

Mr. Boner. OK. Thank you, Mr. Chairman.

Mr. Edgar. [presiding]. Thank you.

Mr. Applegate?

Mr. Applegate. I have no further questions.

Mr. **Edgar**. Mr. Edwards?

Mr. **Edwards**. No.

Mr. **Edgar**. Mr. Dunn?

Mr. **Dunn**. One more question.

We have been talking about potentially missing $1 million; we have been talking about an artificial limb that was missing for 7 months. In your opinion, Dr. Brown, have you got a long way to go despite the changes you made since 1976 toward better management?

Dr. **Brown**. Mr. Dunn, I think the specific problems that have been cited are specifically related to the VAREC in New York. I think, in general, our system is excellent. I know that Dr. Custis, our chief medical director, has recognized there are problems at the VAREC for some time. This is one of the reasons that about a year and a half ago he assigned Mr. Carlton Smith the primary responsibility to oversee VAREC, to see if we could solve some of the problems that were obvious there.

This is the reason also that he sent me there in April in order to look into some specific contracting problems. It is also the reason that we asked for the audit.

My message is that the chief medical director is on top of this problem. He is taking action in order to collect the information, to know what the specifics are, and he will solve the problem.

Mr. **Dunn**. Thank you.

Mr. **Edgar**. Dr. Brown, are you able to stay for a few moments to listen to some of the other witnesses?

Dr. **Brown**. Yes, Mr. Chairman.

Mr. **Edgar**. It would be helpful. There may be additional questions after we listen to a couple of the witnesses. We appreciate your testimony this morning.

Before calling the next panel, I would like to ask unanimous consent that the testimony of John McLaughlin from my congressional district be inserted in the record. Without objection, so ordered.[1]

I would now like to call on a panel of disabled veterans who will testify. Sullivan Hamilton, Dr. Raymond O'Brien, and Kirk Bauer, would they come to the witness table and take their places.

Mr. **Edgar**. We would like to begin by thanking all of you for coming today on your own to this particular hearing and sharing your testimony. All of your statements will be made a part of the record in full and in total.

I think for the process of this hearing it would be helpful if you could summarize your statements, lifting out the highlights that you think are important to share with us, because your total statement will be made a part of the record, and that will give us ample opportunity to question you before moving on to other witnesses.

I would like to call on Mr. Hamilton first to begin and then we will hear from Dr. O'Brien and then Mr. Bauer.

STATEMENT OF SULLIVAN HAMILTON, VETERAN, AMPUTEE, LANSING, MICH.

Mr. **Hamilton**. Thank you, Mr. Chairman. My testimony is rather short and I would like to read it.

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[1] See p. 75.

Mr. **Edgar**. Without objection.

Mr. **Hamilton**. Mr. Chairman, I would like to thank you and my Representative, Congressman Jim Dunn, for the chance to testify before this committee. My name is Sullivan Hamilton. I live in Lansing, Mich., where I work as a line supervisor for Oldsmobile.

On April 21, 1970, I lost my leg below the knee in Vietnam when I stepped on a land mine during a patrol. After recovering in a field hospital in Vietnam and Japan, I was transferred to Valley Forge Hospital in Pennsylvania. I spent 6 months in Valley Forge. When I had my first artificial leg made, five patients, including myself, were bussed in a van to a prosthetic shop and all fitted for a socket that same day. Because there were quite a few patients, we did not each receive that much personal attention on the new fitting. At that time I learned psychologically that that was the process.

I received my leg shortly afterward and left the hospital to return to my home in Saginaw, Mich. For the next 4 to 5 years, I had four legs made and had nothing but problems with them all. Some of the new legs were needed because of shrinkage in my stump. But at no time did any of the legs fit well. The pain at times was unbearable and I would develop painful pressure boils because of the poor fit. I could not stay in the leg for any long period of time.

Each time I had my leg made or a major repair done in Saginaw, I would first have to drive 2 hours to the VA clinic in Allen Park, Mich. to get an authorization from the VA physicians. This required me to take off work for sometimes as long as a day. When I requested authorization for my first leg in Michigan, I was given a list of approved VA shops. The VA did not tell me which of these shops were good, so I just picked one in Saginaw near where I lived. I had four legs made by that shop. As I said before, none of them were very good.

In 1975 I got a promotion to line supervisor at the Saginaw Oldsmobile plant. This required me to be on my leg almost constantly. My previous assembly line job has allowed me to sit and work at my own pace. The pain and pressure got so bad that I again asked for another leg. I drove to Allen Park to get the authorization. This time, my fifth leg, I decided to try a different shop. The new leg from this shop was better than the past ones, but with the extra walking, the pain and discomfort continued.

I left Saginaw in 1978 and moved to Lansing to take a line supervisors job at the Oldsmobile plant there. The layout of the plant required me to walk twice as far as the line job in Saginaw. The pain would get so bad I had to bring crutches to work so that I didn't miss work. It got so bad that in January of 1979 my stump broke down, started to crack and bleed. I was off work for about 2 weeks and had to return to work on crutches. At this point I seriously thought about quitting my supervisors job. I needed the promotion, but I didn't see how I could go on this way.

I asked the VA for still another leg, a sixth one. I had heard about the Institute for the Advancement of Prosthetics in Lansing and I asked the VA if I could have a leg made there. They refused to pay for it if it was made there. I then went back to Saginaw and had the leg made in the previous shop. The leg fit OK for about a month and then things got bad again. I was desperate so I finally went to the institute in Lansing on my own. This was only a month after having my sixth leg made.

Since the VA would not pay for it, I had to get my private insurance company to pay for the new leg. The leg made at Jan Stokosa's Institute in 1979 was very comfortable. After 2 years I can wear it on my very tiring line foreman job and still am comfortable when I get home. If it were not for this new leg, I would have had to quit my line supervisor job.

Recently I tried to obtain a recreational leg so that I could become more active in sports. The VA would not approve this leg. I had heard through some veteran amputees that the VA would authorize sport legs to help keep the veterans active and healthy. I know of some veterans who have gotten legs such as this. I would like to ask the VA, what is the policy on this?

After listening to the panel, I heard them say that since 1976 there hasn't been much research. I would like to know what kind of funding has been out there since 1976 for research.

And they talk about surveys. I would like to know who is being surveyed. I have never been surveyed in my entire career as an amputee.

Thank you, Mr. Chairman.

Mr. **Mottl** [presiding]. Thank you very much, Mr. Hamilton. Next we will hear from Dr. Raymond O'Brien.

STATEMENT OF DR. RAYMOND O'BRIEN, VETERAN AMPUTEE, MICHIGAN CITY, IND.

Dr. **O'Brien**. Thank you, Mr. Chairman. I would like to thank you and Representative Dunn for inviting me to appear before the Veterans' Affairs Committee of the House of Representatives today.

As a World War II below-knee amputee, a board certified member of the Academy of Orthopedic Surgery, and as a taxpayer, I would like to take this opportunity to address several areas of personal concern.

As a veteran amputee and having had an orthopedic residency at Hines VA Hospital, I am somewhat familiar with the VA. In general, my experiences have been only fair to good. I have had difficulty getting a new prosthesis.

In 1979, my below-knee prosthesis was falling apart and I needed a new one. I have a 1-inch file relating my difficulties in trying to obtain a new prosthesis from the VA. In my frustration, I contacted Representative John Brademas from our district in Indiana, having had much correspondence as well as phone calls to his offices, both in South Bend and in Washington. And, though I know you, another representative of the people, will find this hard to believe, it was fruitless. By that I mean I had contacted the VA on several occasions asking where to get a new prosthesis and authorization. I did not hear from them over a period of 2 to 3 months.

I then called Mr. Brademas and he did contact the VA. They did send him a letter authorizing me to obtain a prosthesis for approval from a Michigan prosthetic shop. The third paragraph down, however, stated I would have to get my processing done in Chicago.

So, in essence, the representative was told I did get approval, which kept him quiet, the bottom line was I was not going to be able to get it. I had come to the point of carrying an allen wrench in my pocket to keep my knee joint together, and I still do.

After much correspondence and frustration, I decided to go through the back door, so to speak, and I contacted a friend in Chicago who is chief of a VA amputee team and he expedited this matter. I had discussed with him my desire to be more active, as I was only a poor, one-legged skier at that time. I would like to do more recreational activities than fishing or swimming. I am aware personally, professionally, and from the literature, of the decreased life expectancy of amputees.

In April 1981, after five visits to the prosthetic shop in Chicago, I was finally supplied with a prosthesis. I have, however, been unable to wear this prosthesis because of pain and poor gait. Frequently I wonder how the veteran amputee, not with my medical background, is able to obtain a new prosthesis.

I have been in private practice for 22 years. In 1956 I had the opportunity to meet Dr. Eugene Murphy of the VA, Director of Prosthetic and Sensory Aides, as I was an exhibitor of a plaster pylon program from Hines. This program was presented at the Academy and AMA meetings sponsored by the VA. It is my opinion that there was far more organization, purpose, and direction of the prosthetic program—though smaller at that time—than now exists.

Since then, considerable work has been done by Drs. Nickel (rehabilitative engineering), Malone and Moore (amputation and vascular studies), Burgess (amputee centers), Katz, Bennett and others, in many areas of technological advancement, gait training, et cetera, but very little has been directed or correlated to the comfort and function of the patient's stump. I see patients because of pain. Broken prostheses usually go directly to the prosthetist. A. B. Wilson has written of this problem in an article entitled "The Connection".

I feel that the various advancements of the peripheral prosthesis have been a great contribution. However, very little seems to have been related back to investigation of the actual comfort and function of the stump. I do not find fault only with the VA, as the programs in Seattle, New York, and Phoenix are exceptions. However, there are far many more veterans in the hinterland than in the centers, and an overall, better disciplined program needs to be devised.

I feel that the orthopedic and vascular surgeons, engineers, and in particular, prosthetists, should share this rehabilitative engineering responsibility. Amputees, young and old, are not all a "Mr. Hayes", with New York VA prosthetic experience.

The last concern I wish to communicate has to do with REC programs. I am aware that researchers and/or professors at medical centers are awarded grants for various studies. However, as one considers the programs, many of them seem far removed from the application of assistance to the veteran, and certainly far removed from assistance to the veteran amputee. I further realize that there exists within the VA the Medical Research Service, responsible for peer review of the programs. I suppose these grants are given to medical centers under the guise of "perks". However, I question the relationship to the VA of often fragmented and not directly veteran-related studies. Maybe it is grantsmanship.

In conclusion, I have had difficulty obtaining a new prosthesis. I feel more work on the stump-socket interface is needed to improve comfort, function, and proprioception.

As an orthopod not from a medical center, and as a veteran amputee, I would like to see an overall approach to these problems for the entire VA. Maybe we should take the approach recommended by Dr. Malone and Dr. Moore in Tucson, and Dr. Burgess in Seattle, and have an overall program in regard to research and treatment with resultant centers that are knowledgeable.

Possibly we have come to that point in time when the volume of knowledge in this field has grown to such an extent that a subspecialty with fellowships should be developed, much like those in total joint replacement, spinal surgery, and sports medicine.

In conclusion, I am of the opinion that we need better direction and goals for these problems. Thank you very much for your time and interest.

Mr. **Mottl**. Thank you very much, Doctor, for your fine statement.

Next we will hear from Mr. Kirk Bauer.

STATEMENT OF KIRK BAUER, VETERAN AMPUTEE, BOSTON, MASS.

Mr. **Bauer**. Mr. Chairman, I would also like to read my comments, if I could.

Mr. **Mottl**. By all means. Go ahead, Mr. Bauer.

Mr. **Bauer**. My name is Kirk Bauer, and I was injured in Vietnam in March of 1969 from a hand grenade explosion. I lost my leg above the knee. I spent 6 months in the hospital and was discharged.

In the period between late 1969 and 1976 I received five legs from the VA. It was not until 1976 that I had a prosthesis that I was comfortable with and allowed me to carry on relatively normal activities. When I was first authorized a leg, I was given a list of VA-approved shops in the San Francisco area. I was concerned about getting the best care possible, so I asked which were the best shops. The VA was unable to provide me with this information, so I blindly picked a shop in my hometown, in Oakland, Calif.

The owner was a certified prosthetist, but as I learned later, he was busy running the business and was not involved in the day-today making of the limbs. His assistants were not certified and some of them I talked to had had very little experience in making artificial prostheses. It was an on-the-job kind of training program and we were the subjects.

I received no satisfactory fits from those legs. The fits were sometimes so bad they would cut off circulation, they would cause pressure sores, they would cause chaffing to the point where you would rub your skin raw. I can remember times when I literally would be screaming in pain because it would hurt so much. I could wear the leg about 2 or 3 hours and then I would have to take it off. It was just simply not tolerable.

During my visits to the VA clinics, I would say I hurt and what do we do about this, and they would basically suggest another fitting or remind me that as an amputee I would have to learn to live with a certain amount of pain and discomfort. Well, I was ready to do that, but sometimes the pain was just a little bit too much to take.

In about 1973 or 1974 a fellow veteran amputee suggested a modification, using a soft sock. This had never been recommended by the VA, and when I asked them about this modification, they discouraged it and suggested still another fitting. I was tired at this point of going the same course and not getting any satisfactory results, so I tried the modification suggested by my friend and it was a great improvement over the previous fitting.

I learned two important lessons for myself at that time. First, I realized if I really wanted to do something about my problem I would have to fight for it, even from an agency which was supposed to be representing my interests. Before this I would just meekly follow the advice of experts because I didn't know any better. I also began to realize there seemed to be a certain inflexibility in the approach that the people that worked with me had toward my problem. They didn't seem to want to try different types of approaches to try to figure out if they could do something about the discomfort.

In 1975, when I moved to Boston, I received authorization for a fifth leg. At this time I had developed a network of amputee friends through some handicapped sports organizations I had been working in, and they were able to direct me to a qualified prosthetist. But they told me to insist that I have the owner, the certified prosthetist, do the work because the turnover in that shop was so great that you never knew who you were going to get to work on the leg.

I had to insist to the point of threatening to walk out of this shop if he didn't do it himself. So he finally agreed to do it. I had to wait over 3 months for that leg, but it was worth it. It was the first time that I had a comfortable fit, that I could wear 12 and 14 hours a day without any major discomfort. I finally had something to compare my past fits with that indicated to me a lot of the unnecessary pain and suffering was just that, that it was unnecessary.

I had fallen into a trap that I had seen so many times, and that is you learn to accept the pain and you just figure that it's part of being an amputee.

I had had a number of problems with equipment. I had a foot unit break on me about six or eight times in the course of 1 year. It got to the point where I had to carry an extra unit around with me in a little pack everywhere I went. At one time it broke in the middle of—I was working in a courtroom and it broke in the courtroom. I had to have my boss help me hop out, and the spectators were sitting there watching my foot do 360's.

Presently, I have a rotator. The concept of a rotator is very good, with a person like myself who has a short stump, because it allows the foot to rotate independent of the leg and gives me a great deal of comfort. It takes some of the twisting pressure off my stump. Right now that rotator is frozen rigid because I have had so many problems with clicking noises in it. I went back about four or five times to have it repaired and at the cost of over $500, and we finally just had it frozen up.

Ironically, I talked with another prosthetist who had stopped using that same unit a couple of years ago because he noticed the design defects in it. Now, I know the VA has an evaluation program and it just seems a waste to me that they were not able to detect that and to get information out to the field so these kinds of repeated mistakes, and wastes of money, are not made.

Just in closing I would like to say that I have met some very sincere people in the VA that are trying very hard to work with the veteran, but all too often the VA bureaucracy seems to be a hostile, unresponsive entity with no real concern for those they are mandated by law to serve. This has turned off a lot of my veteran amputee friends. The VA prosthetics program is no exception.

I have found in my experiences that this program offers too little guidance and that the prosthetic shops which contract with the VA are terribly inconsistent and generally poor in quality craftsmanship. There is a lack, in my opinion, of a flexibility in the approach to solving the problems of many veteran amputees, and I feel the Veterans' Administration has failed in its mandate to serve the veteran amputee.

Thank you very much.

[The prepared statement of Mr. Bauer appears on p. 76.]

Mr. MOTTL. Thank you very much for your excellent statements. How long have you had the limb fabricated by the Institute for the Advancement of Prosthetics?

Mr. HAMILTON. I had the leg made in 1979 and have had it ever since.

Mr. MOTTL. How many limbs have you had before this last leg?

Mr. HAMILTON. Approximately six before this last one.

Mr. MOTTL. And what was the approximate cost of that first group of six limbs?

Mr. HAMILTON. As I can remember, the average cost of those limbs was around $1,200, and I think the latest one was around $1,500.

Mr. MOTTL. So if they would have done it right in the first place, it would have saved a lot of money, wouldn't it?

Mr. HAMILTON. Right.

Mr. MOTTL. Plus the aggravation and pain you went through.

Mr. HAMILTON. That's right.

Mr. MOTTL. Dr. O'Brien, it is my understanding that the VA does furnish limbs for sports purposes to certain amputees. What reason have they given you for not furnishing such a limb?

Dr. O'BRIEN. One, I have never received, since I have been associated with the VA, since 1945, any notification, any publication of anything new. When I was the low member on an amputee team in Chicago, I never heard of this. And I haven't seen anything recent.

With regard to being active in sports, I never received any communication. They didn't respond to that. Their only comment was that I could get it, and then out of Chicago I could not get it.

Mr. MOTTL. Where do you reside?

Dr. O'BRIEN. In Michigan City, Ind.

Mr. MOTTL. That is right close to a school I went to, Notre Dame.

The gentleman from Michigan, do you have any questions for this distinguished panel?

Mr. DUNN. I do. But before I start, I would like unanimous consent, Mr. Chairman, for Mrs. Penny Penseyres, who is not on our original witness list but nevertheless took the time to come on a bus, Mr. Chairman, from California to submit some testimony. Her son is a disabled veteran and I would ask that that testimony be entered in the written record.

Mr. MOTTL. Without objection, it will be so submitted.[1]

Mr. DUNN. I do thank her for coming.

Let me start with Mr. Bauer, if I might. You gentlemen represent Michigan, Indiana, and California, diverse parts of our country, and yet the VA has said they get few complaints from their veterans. Are you guys, chronic complainers? You know, why isn't VA getting complaints, Mr. Bauer? Do you have an answer for that?

Mr. BAUER. It is true, that officially, I don't believe that veterans do complain. Unfortunately, Vietnam veterans are notorious for internalizing some of their problems, and this is just another indication.

There is a couple of reasons that I think they do not complain. I talked to a lot of people who are just basically fed up with the system. They do not feel it is responsive and they don't want to have anything to do with it. As one veteran put it to me, "I would rather put up with the pain than put up with their bull."

Mr. DUNN. Doesn't it also go back to what the chairman asked of Mr. Hamilton, that when you go in to get four legs, that is not written down as a complaint; it is just written as four new legs.

Mr. BAUER. As far as I know, no. I have a friend in California who is a veteran, a BK, below the knee. He has had 11 legs since he was injured in 1970. He told me once that he gets about 3 months of trouble-free wear out of each leg, each year. I asked him if he was satisfied and he says yeah, they give me what I want. I looked at him and said, "How could you consider that satisfactory treatment?" He said, "Well, Kirk, that is the price you pay for being an amputee." It is that kind of mentality, that we are told you do have to put up with a certain amount of pain and discomfort, and you learn to live with it. This guy was not complaining, but he wasn't getting any kind of satisfactory treatment, either.

Mr. DUNN. Mr. Hamilton, I don't think we made the point strong enough. You had six legs and then had to go outside the VA service to finally get a leg that fit you properly; isn't that true?

Mr. HAMILTON. That's true.

Let me respond a little bit to the other question. As I said, the first time I went to the shop we were treated not as individual patients. We were herded into a room; some of us had to stand around and watch the others while the process went on. Mentally you develop that this must be the way. Coming from the experience I had in Boston, not knowing how you're going to move around or how you're going to get just what is involved, you really don't know. So you go from that initial experience to the time where you get down to your shop in your home town, and the process is the same, you develop that this is the way it is. So you allow this process to go on and you just go back and do it again, and back and do it again, because you have no way of knowing that it doesn't have to be that way.

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[1] See p. 77.

I went back and back until the time I did stop at the Institute, and the VA didn't pay for that. My own private insurance company paid for that, and that's how I get around today, not on the VA funded apparatus but what my insurance company paid for.

Mr. **Dunn**. Dr. O'Brien, you talked about the days since World War II; the VA talked about the improvements they have made since 1976. In your opinion, is the VA keeping up with what is going on with the outside world, or have we really made that many improvements inside the VA program since World War II?

Dr. **O'Brien**. Since 1976 or World War II?

Mr. **Dunn**. Either date, sir.

Dr. **O'Brien**. Well, in the period of time after World War II, for about 10 years, I think they were a very positive force, not only in the United States but throughout the world. Approximately 10 to 12 years ago they then got kicked in again and they were very positive. The last 3 to 4 years that I have seen in the literature, there is not much new. I am talking about their literature. There have been many programs, in my opinion, that are completely unrelated to the veteran amputee.

Mr. **Dunn**. One more question.

Kegel, Carpenter, and Burgess said that 67 percent of amputees were comfortable and that 75 percent were satisfied with their prostheses. What do you think about those figures?

Dr. **O'Brien**. In regard to the 67 percent, I can only talk in regard to below-knee. There were 87 patients below-knee amputations. When they say they're comfortable—I was comfortable and I had a bleeding stump for 18 months. From day 1, when you're an amputee, you are told you are going to have pain. You go to the VA and talk to the doctors there, and they say "You're going to have pain."

The only problem that really comes up for the amputee is when it gets so unbearable on weight bearing at a location, that you cannot, then you say it's uncomfortable. All the rest then falls into the comfortable group. I think that if I were to do an orthopedic procedure in which my results are going to be 67 percent, I certainly wouldn't continue it. If I were running a program, I would look seriously at positive results at 67 percent.

Mr. **Dunn**. Thank you.

Mr. **Mottl**. Thank you, Mr. Dunn.

The gentleman from Alabama, Mr. Smith.

Mr. **Smith**. Thank you, Mr. Chairman.

Dr. O'Brien, do you feel there is an inconsistency in quality between various VA approved prosthetic shops?

Dr. **O'Brien**. Yes. This has been pointed out by even people in the VA.

Mr. **Smith**. Do you feel there is a need for better information sharing between the VA and orthopedic surgeons like yourself?

Dr. **O'Brien**. Yes, sir. For example, I belong to the Academy of Orthopedic Surgery, and in the last 4 years there has only been one course that Dr. Burgess put on this year. There is none planned for next year. There is no publication that we receive from the VA in regard to, one, prosthetics, and two, of any further courses they are going to sponsor for the orthopedic surgeon.

Mr. **Smith**. In your opinion, does there need to be more information sharing between the orthopedic surgeons and the prosthetists?

Dr. **O'Brien**. Yes, considerably. I happen to feel a little different possibly than other people in this room. I feel that most prosthetic teams, the final answer is the orthopedic surgeon or the doctor. I feel it should be a combined effort. There are many places in the country in which the orthopedic surgeon may not be as up to snuff or up to date in regard to prosthetics as the prosthetist, and this should be a combined effort.

I think possibly in order to expedite matters that you should have one person with a final say, whatever would be the best judgment, and possibly the doctor. But it should be more of a combined effort.

It is on paper, but I don't think it is in fact.

Mr. **Smith**. In your 22 years of private practice as an orthopedic surgeon, how often have you heard about the results of VA-sponsored research relating to amputee problems?

Dr. **O'Brien**. Very little. There is very little in the literature. Three years ago at an Academy meeting I had an opportunity to talk to the people from Hosmer Dorrence, the people that developed the rotator unit. They told me there were 25 units being sent to the New York central office for study. I haven't seen any results of this study.

Mr. **Smith**. Is there any indication of when that study will be made available?

Dr. **O'Brien**. Not to my knowledge.

Mr. **Smith**. In your opinion, do we have the technology now to properly fit most amputees?

Dr. **O'Brien**. Yes, sir, we do. I do not feel that most of the technology has been studied adequately. I think some of it has been predetermined in regard to the results and responses. I don't think enough has been given in regard to their actual comfort. More has been given to the technology.

Mr. **Smith**. What do you think about the rehabilitative engineering centers?

Dr. **O'Brien**. I feel there should be an overall direction and goal of these programs. For example, I feel there is very little served for the amputee in studying various broken total hip replacements, that of methyl methacrylate studies at certain universities, that of bone plate studies in New Orleans, and various other studies that have been given grants by the VA.

Mr. **Smith**. Thank you, sir.

Mr. **Mottl**. Thank you very much, Mr. Smith.

Mr. Dunn, do you have one quick question?

Mr. **Dunn**. Yes; one more question.

Since World War II or since 1976, when the VA talked about a reorganization structure, we have dumped obviously oodles of Federal dollars into that. And yet two of you had to go outside that system to get a suitable leg.

In your opinion, would the word "gross mismanagement" of the VA's prosthetics program be appropriate?

Mr. **Bauer**. Well, I don't know anything about the management of the VA system. All I know is from the bottom end, that there is an awful lot of veterans who are not being served properly. My conception of the VA and this program is that it is not a very efficient operation. But I am not on the inside and I don't know what their problems are.

Dr. **O'Brien**. My response to that, I think there is a considerable gap between what is written on paper and what actually 'takes place.

Mr. **Bauer**. I would definitely agree with that, as far as just the average vet.

Mr. **Dunn**. Mr. Hamilton?

Mr. **Hamilton**. I think that there is something lacking there. By the fact that you have to go to a firm not approved by the VA to get results that you have to have to maintain your life, and get mobility to be able to form a life, I would say that management is definitely lacking there. As a manager myself, we are not allowed to manage that way.

Mr. **Dunn**. Thank you.

Mr. **Mottl**. Thank you very much, Mr. Dunn.

Does the distinguished counsel for the committee, Ralph Casteel, have a question for the panel?

Mr. **Casteel**. Thank you, Mr. Chairman.

I would just like to ask Mr. Hamilton for clarification purposes, on page 1 of his testimony he made the following statement:

> After recovering in a field hospital in Vietnam and Japan, I was transferred to Valley Forge Hospital in Pennsylvania. I spent six months in Valley Forge. When I had my first artificial limb made, five patients, including myself, were bused in a van to a prosthetic shop and all fitted for a socket that day. Because there were quite a few patients, we did not each receive that much personal attention on a new fitting.

My clarification is, Is the Valley Forge Hospital a VA hospital or a military hospital?

Mr. **Hamilton**. It was an Army hospital at that time.

Mr. **Casteel**. And it was the Army that did the busing and the fitting?

Mr. **Hamilton**. Right. They took us to a shop in Philadelphia.

Mr. **Casteel**. That clarifies the point, Mr. Chairman.

Mr. **Mottl**. Thank you very much, Mr. Casteel.

The Chair would like to thank this distinguished panel for sharing your unfortunate experiences. I think it will serve the committee very well in its oversight hearings on this very important topic. Thank you very much for being with us this morning.

Mr. **Mottl**. Next we will have a panel of prosthetists that will be comprised of Jan Stokosa, Jerry Vilminot, and Alan Finnieston, if they would be kind enough to come forward to the front table.

Why don't we start off with you, Mr. Stokosa. Your entire statement, as with the other colleagues at the table, will be submitted to the record without objection, and you may proceed as you deem fit.

STATEMENT OF JAN STOKOSA, DIRECTOR, INSTITUTE FOR THE ADVANCEMENT OF PROSTHETICS, LANSING, MICH.

Mr. **Stokosa**. Thank you, Mr. Chairman, and members of the subcommittee. I would like to summarize my statement.

Mr. **Mottl**. Yes; please do.

Mr. **Stokosa**. I would also like to ask permission to use the slide projector and easel right over here, if they can be brought forward.

Mr. **Mottl**. Go right ahead.

Mr. **Stokosa**. My name is Jan Stokosa and I am a certified prosthetist by the American Board for Certification of Prosthetics and Orthotics, a VA-qualified prosthetist, and I am director of the nonprofit Institute for the Advancement of Prosthetics in Lansing, Mich.

I have had approximately 12 years experience as a prosthetist practitioner for the Veterans' Administration hospitals, many of them in the States of Michigan and Illinois. I have seen veteran amputees from World War I, World War II, the Korean war, and the Vietnam war.

I offer my respect completely for the historical achievements of the Veterans' Administration. However, I would like to take strong issue with Dr. Brown's statement specifically concerning the excellent care provided the veteran amputee with regard to prosthetic fittings, or the fitting of an artificial limb, and more specifically for the leg. You have to walk on legs.

The major problem that veteran amputees and all amputees face is pain and immobility. This is very well substantiated in a report from the General Accounting Office of this year and the National Academy of Sciences in 1976.

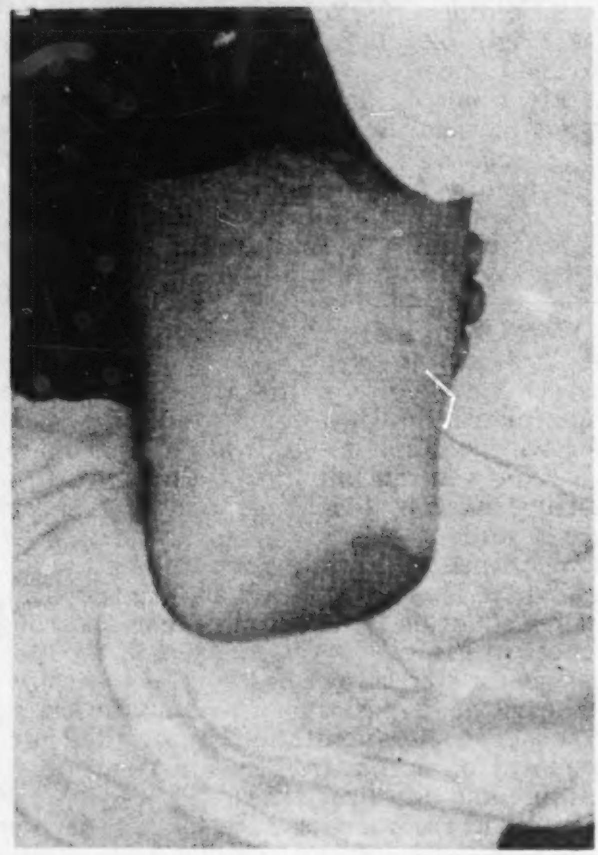
What is the reason for this is the question. I see it as two parts—one, that how the surgeon performs the amputation surgery is crucially important, that the amputation stump that is remaining after surgical removal of that extremity must subsequently bear the weight of walking and other activities.

The second point concerns the structure for the VA contract for reimbursement of prosthetic services. I feel this is sadly outdated in these respects: one, it doesn't provide allowances for varying complexities of cases. They refer to in the VA contract for services that the below-knee amputation, any person who has an amputation between the knee and ankle, will be categorized as one component and the reimbursement to the private contract facility or prosthetist will be set and will not be altered, regardless of the complexity. We all know that when you step on a land mine you don't simply just lose your leg. There may be multiple injuries and those need to be accounted for.

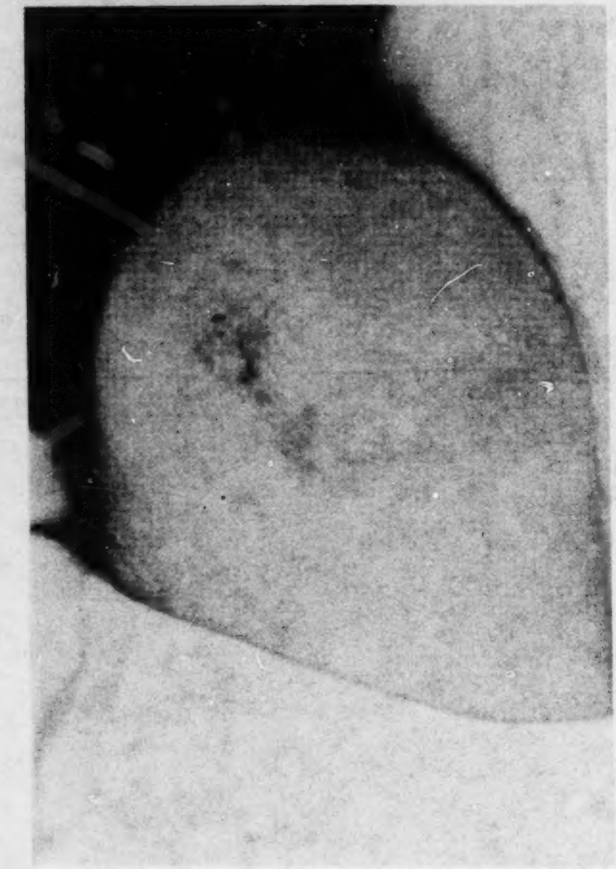
I would like to show some slides at this time, if somebody could hit the lights.

These slides will indicate two things: One, the problems associated with poor fitting of artificial limbs and, two, surgical errors, if you will.

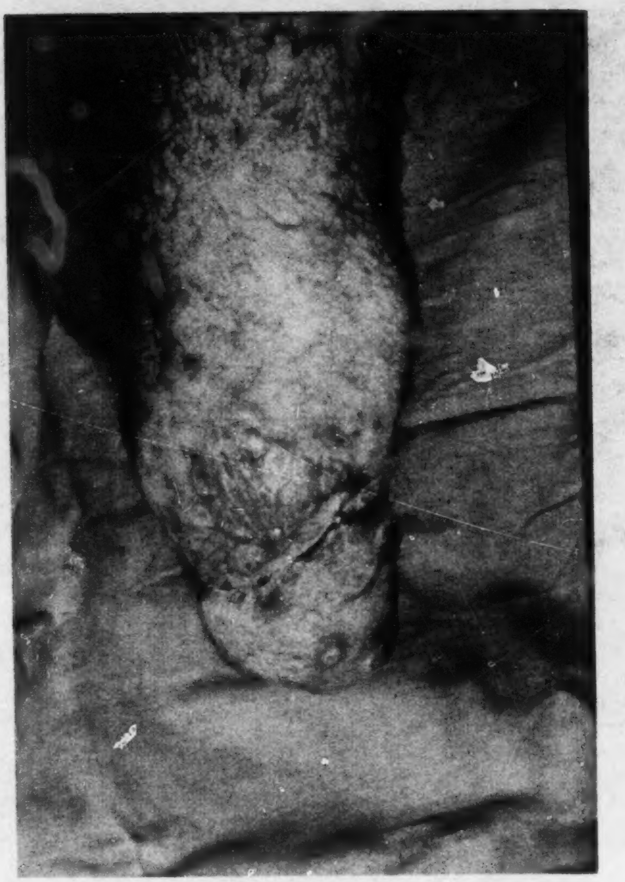
[The slides follow:]



You see here an above-knee amputee, and the darkened area is the result of an ill-fitting prosthesis.



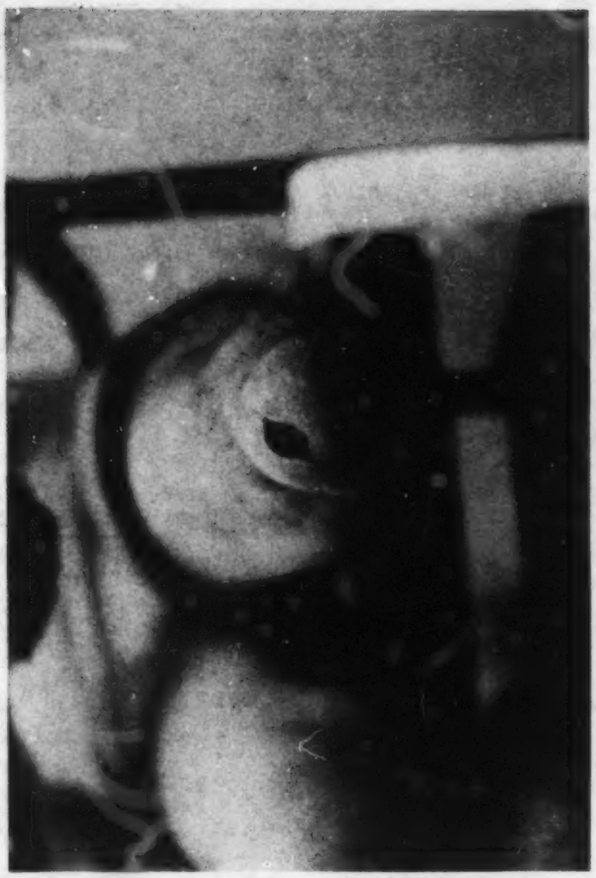
This again is the end of a thigh. The thigh is amputated between the knee and the hip, and we have--it doesn't look like much, but this is extreme pain, a skin problem.



Complexities. We can't treat this. This is a shot of behind the person's knee.

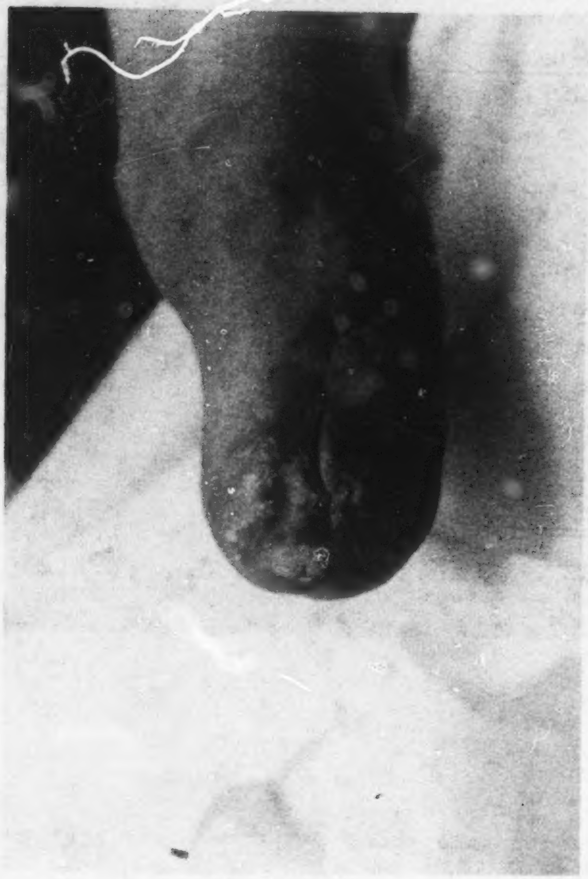
This is the knee area, so that the remaining portion below the knee is very short. We have problems with burning skin grafting area. So this can't be treated as a standard amputee with a set price.

It is very difficult to see this slide, but this is looking from the very bottom of an amputation at the mid-calf level, the very end.

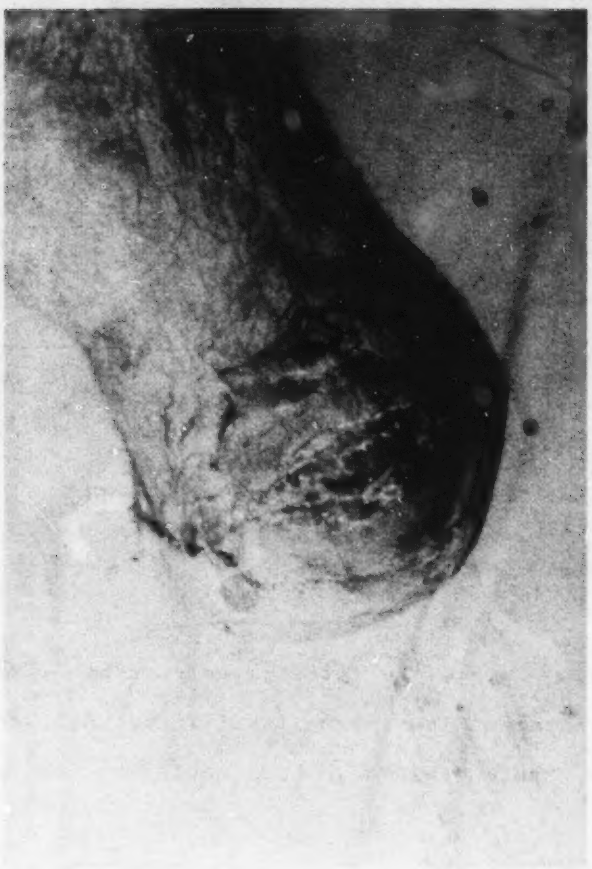


The prosthesis caused this, obstruction of unison lymphatic return, a terrible problem that necessitated further surgery.

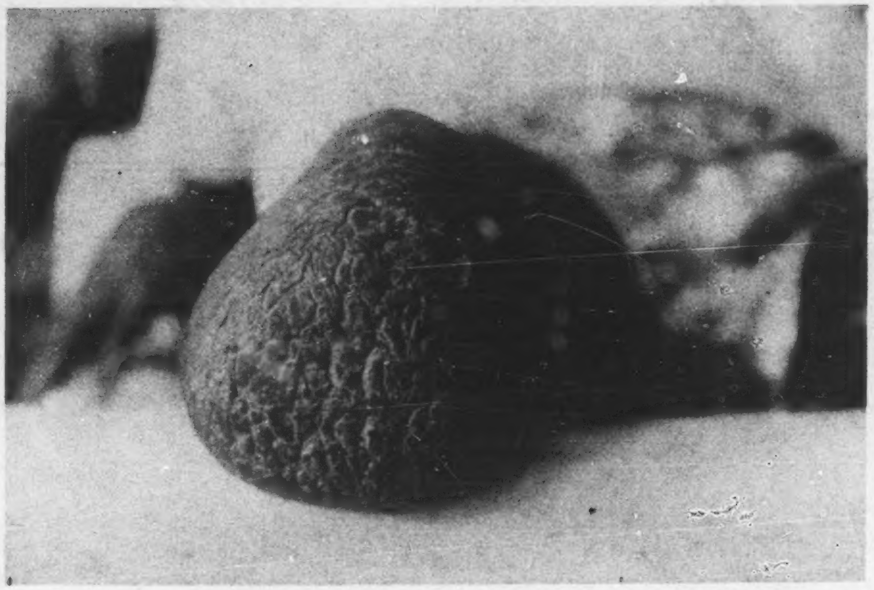
Again, the same thing. A tremendous problem in fitting this case. This is right at the knee. It's a very close-up shot, but it poses tremendous problems.



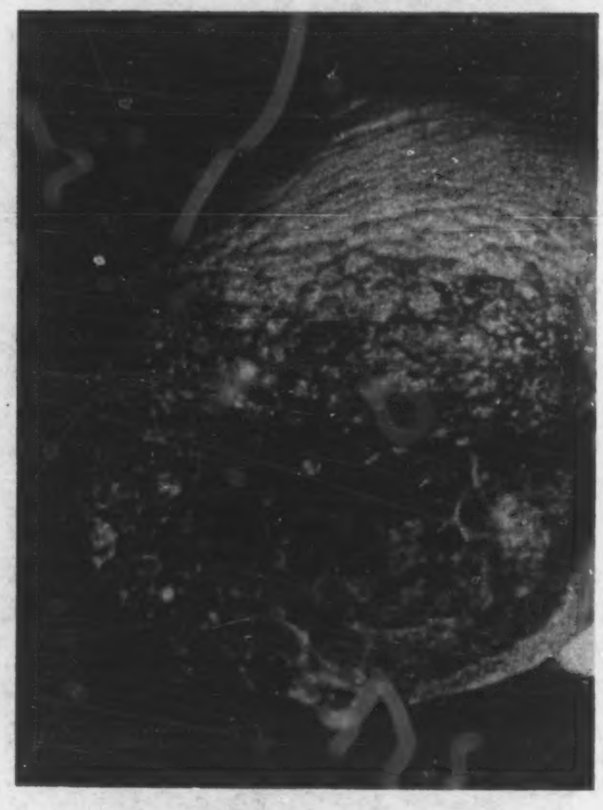
Again, there is the knee on top, through the middle of the calf right here. The knee is up here. Poor prosthetic fit. This is the shinbone, again a poor prosthetic fit.



Again, this is a below-the-knee amputee, and this is the kneecap up here, and we are looking from the bottom. The skin is like an orange peel.



Once the fitting was corrected, the skim improved and became like normal. If it was not taken care of properly, there would have been necessity for further surgery.



Again, the bottom at the mid-calf level, that is dead tissue, a poor prosthetic fit.

Here is the same thing, and a surgical problem as well.

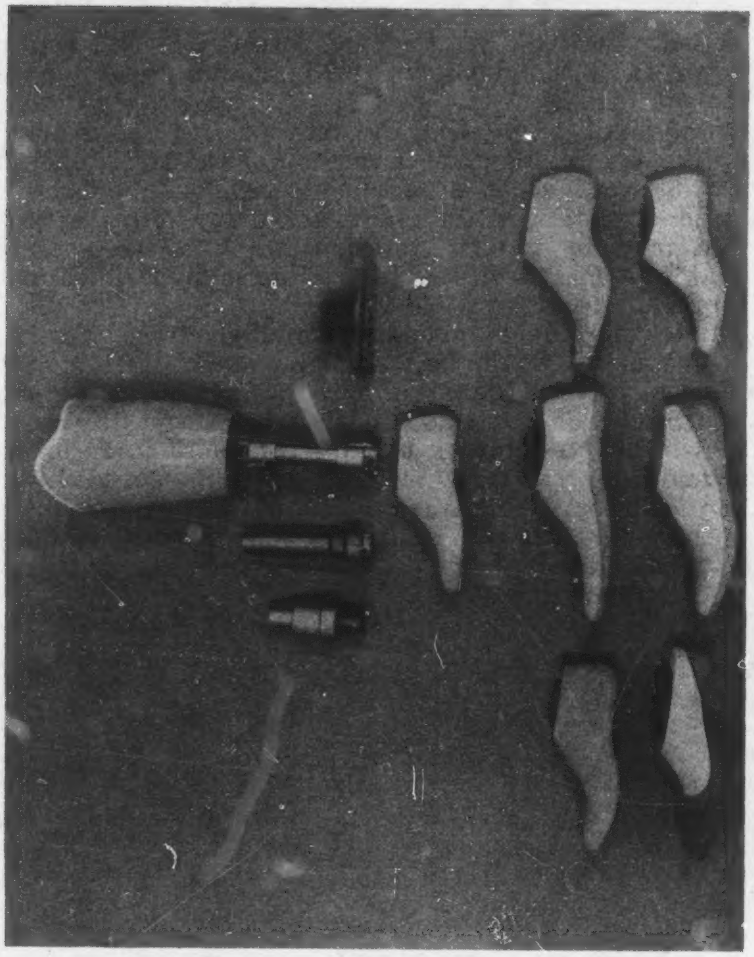
I was talking about the structure of a VA contract, and I feel that it is sadly outdated with regard to providing allowances for varying degrees of complexity of the individual case. I have just shown you the slides.

The second point is, allowing the veteran amputee to try different parts—we are talking about a foot, an ankle, and a knee. There are many different kinds of artificial feet made today, in this country and other countries. There are many different kinds of ankles that are made to allow rotation, to reduce stress, and there are many different kinds of knee mechanisms, hydraulic, pneumatic, and combinations.

It would be extremely impossible for anybody to predict what bearing components would best suit the needs of that amputee.

There is a picture on the board here I would like to refer everybody to. In the lower left-hand corner it has seven different types of artificial feet. The policy in the VA is that the veteran goes to the clinic and the prescribing person, usually the surgeon, writes a definite prescription saying this particular type of foot. It does not allow for the veteran to try something new or to try two or three different types of feet that may improve his mobility.

[The picture follows:]



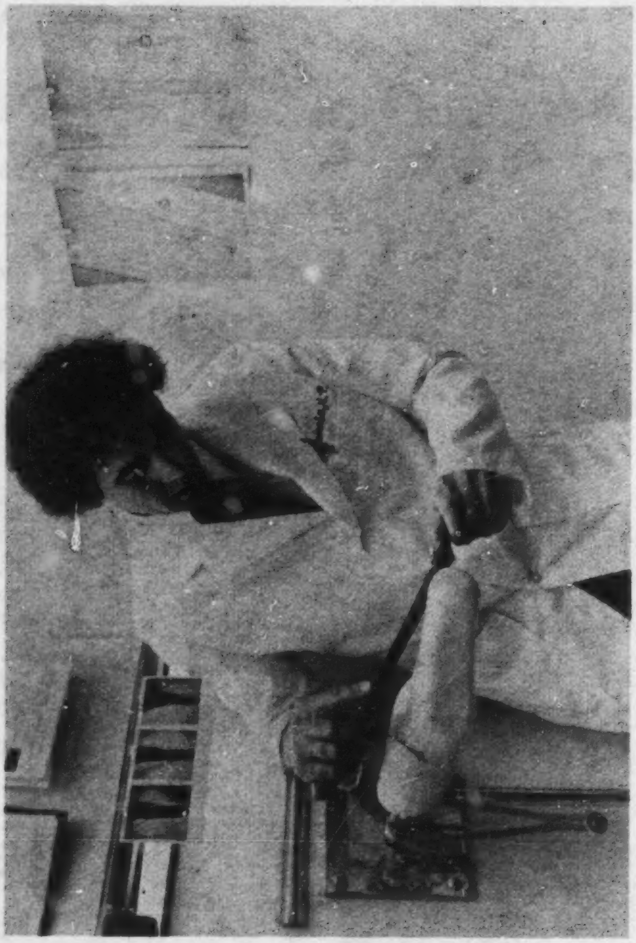
Finally, the most important factor is the fitting method to achieve comfort. As I said earlier, pain is the No. 1 problem and the VA does not allow payment for services for current technology that has been developed and has been in use—in fact by the VA—to fit amputees with less pain.

All this boils down to is that there is a relatively poor level of care to the veteran amputee as compared to the private sector.

I would like to explain now one of those fitting methods to eliminate the problem of pain when we don't have degrees of surgical problems facing us. We can have an amputation stump that is surgically prepared and there should be no pain.

The normal procedure for fitting—and again I have the photos, left to right, a plaster cast is made, the prosthesis is made. We are looking at a VA prescribed prosthesis.

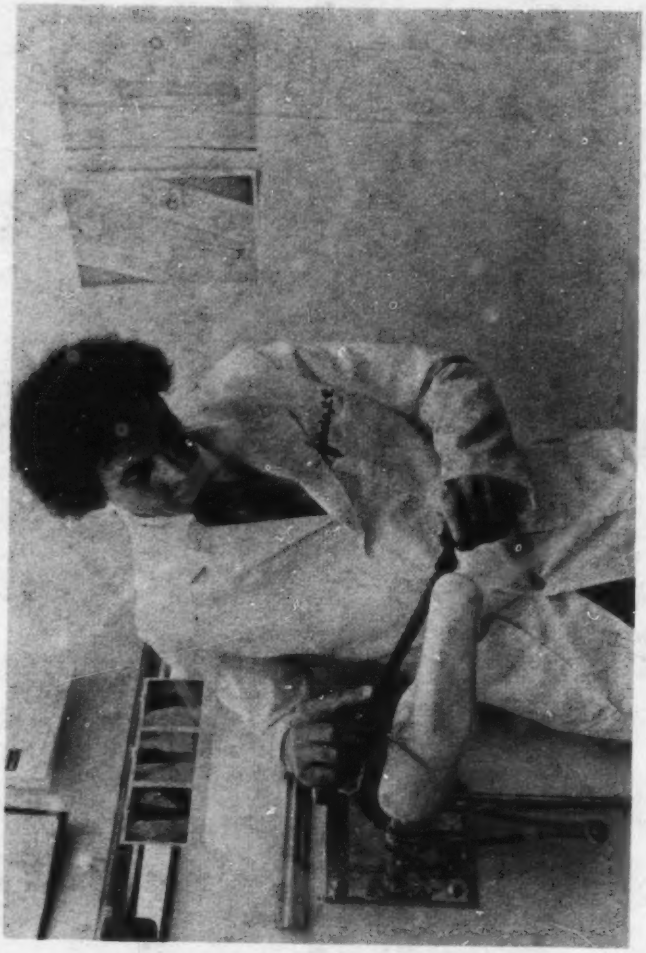
[The photos mentioned follow:]

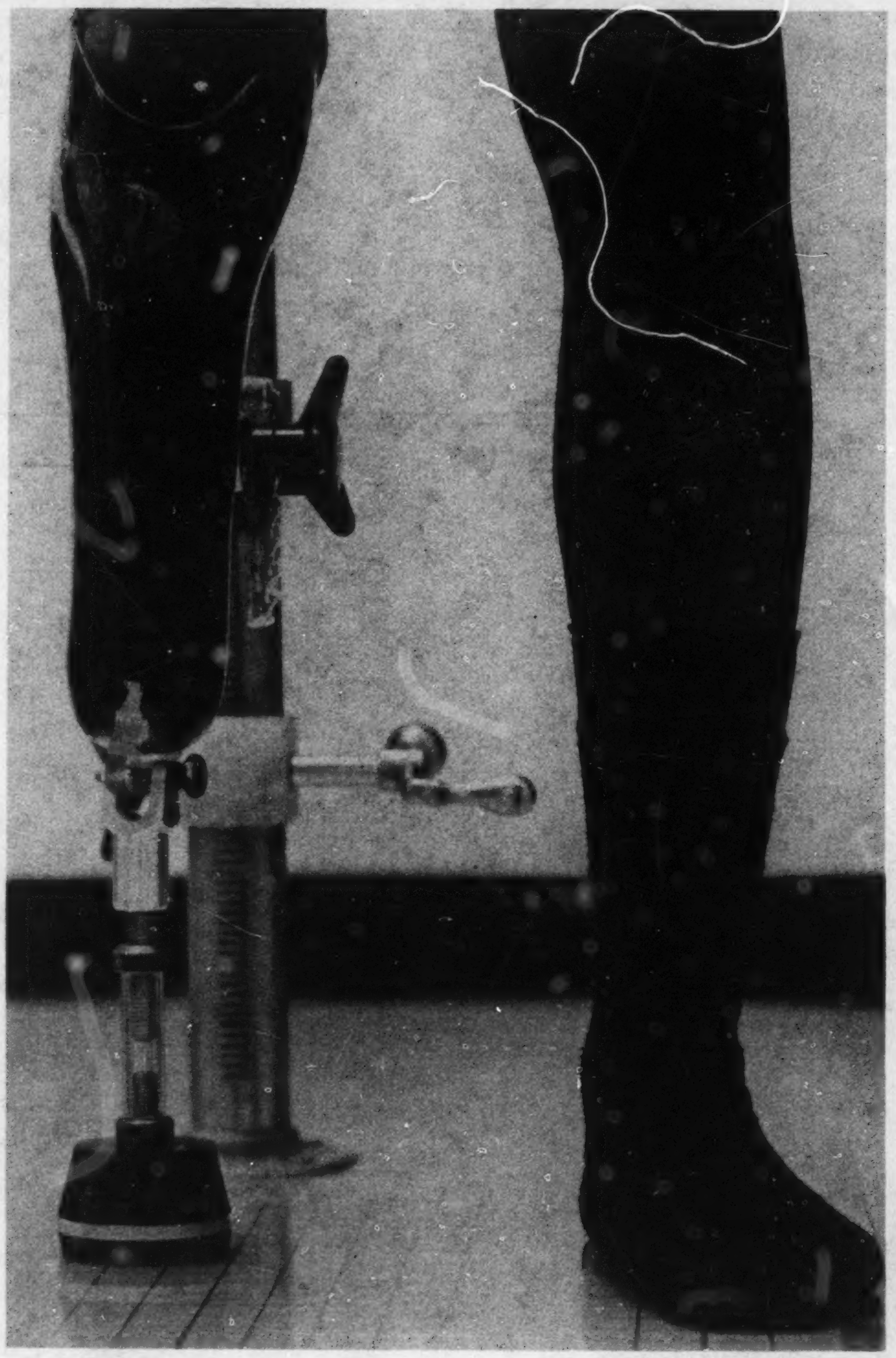


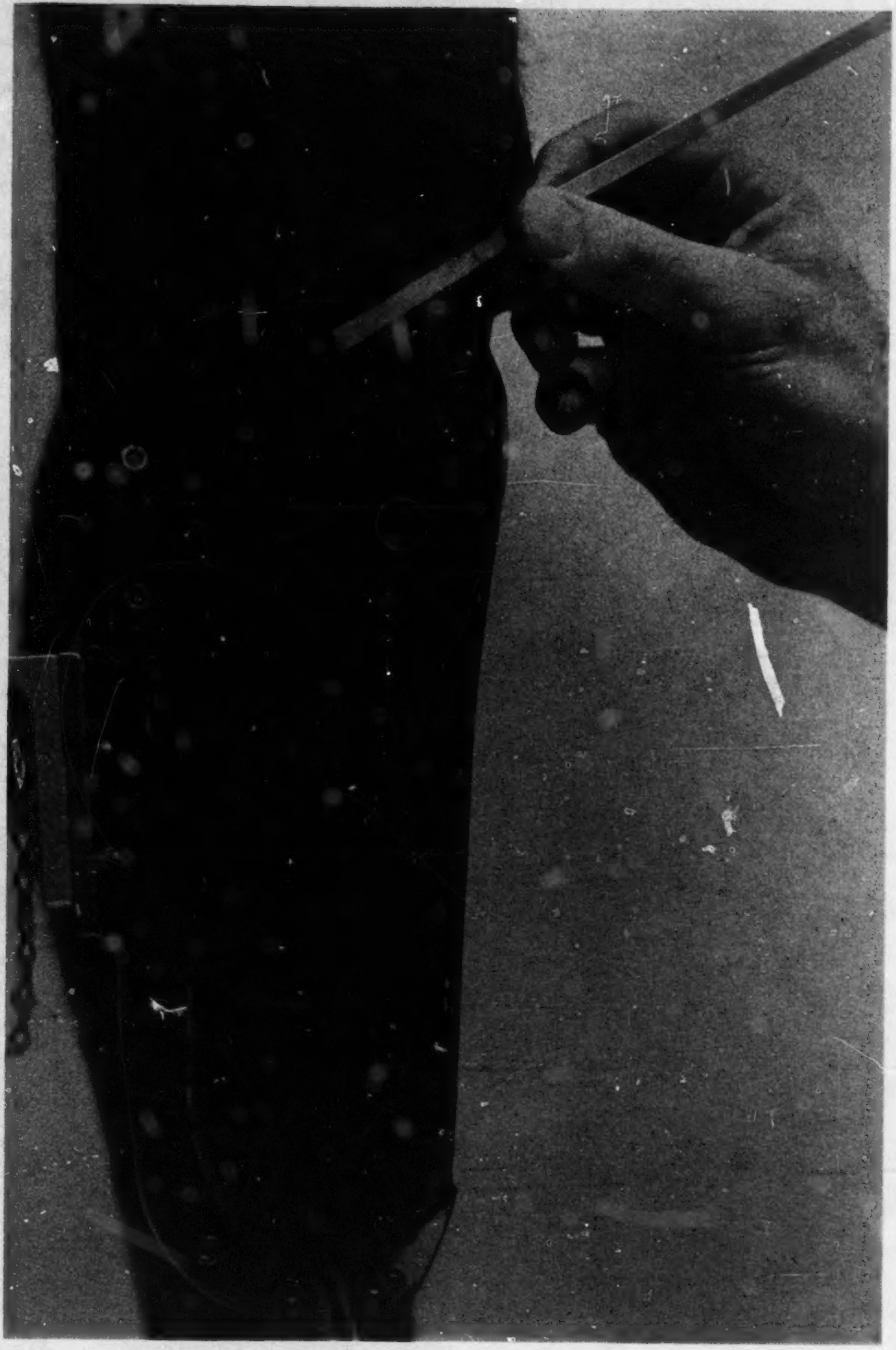
Mr. Dunn. By normal procedure, are you talking about VA procedures?

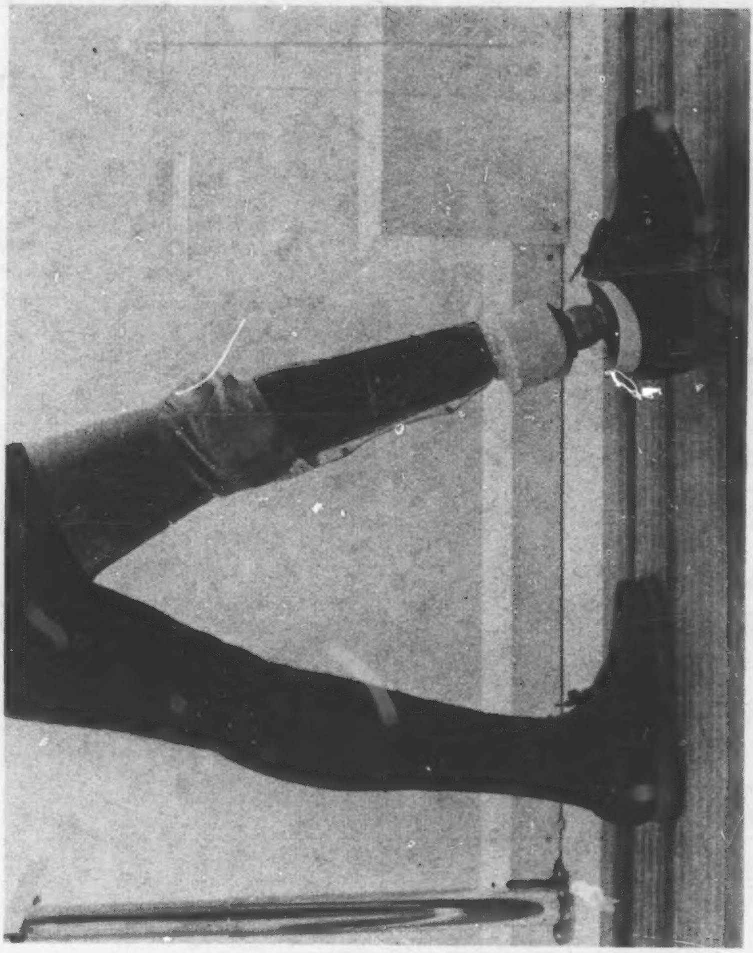
Mr. Stokosa. Yes. The first two procedures are equal with regard to what I'm going to say. The first two steps are the same.

[The material mentioned follows:]









The third step is normally here [indicating an artificial limb sample] and this was prescribed 6 months ago by the VA clinic chief. If you can imagine, the person's amputation is in the midcalf area. This is steel bars and leather. The person puts his leg in here. The thigh is up here and it is laced in, and normally there is a strap that goes around the waist to hold this one, but this person decided that was too uncomfortable.

His stump goes here. You can't see anything through there, but the person who has a pressure sore, the only way anybody could find out how to take care of that is to either look at the blood on the inside where it is marked, or an educated guess and go in there and grind out an area to relieve the pressure on that spot. This is common practice.

However, a method developed—I shouldn't say developed, but expanded on, an earlier development by the VA in 1960, is a transparent test socket which allows the prosthetist to see the stump inside.

We replace this with this clear plastic test socket sample. You put your stump inside of this and you now can see it, a real close up shot, and you see where the pressure spots are. If it hurts there, if it turns very white, you can see the the pressure and we can go in and modify this test socket and continue to modify it until we have achieved comfort.

The amputee and the process together will achieve comfort if there are no severe medical complications. This is not approved in the VA contract.

In summation, I would like to thank the members of this committee for the opportunity to speak here today. I know Congressman Dunn personally and am deeply convinced of his sincerity. I have no reason to question the sincerity of the other members of this committee and am gratified by the effort they have put forth to bring this hearing about. Yet there is something I must say before closing.

This is not the first time the Veterans' Administration has been investigated. I personally have been barred from practicing in a Veterans' Administration hospital due to my outspoken views, and then exonerated in the VA's own investigation of this matter. To this day I am still barred from that hospital.

The Veterans' Administration ignored the findings of their own investigation. This, of course, is only an anecdote which points to the larger issue. I call your attention to the investigation of the VA conducted in 1976 by the Committee on Prosthetic Research in the VA. The findings were almost unanimously negative. Yet what has changed? Is the veteran receiving better care and support from the VA today than he was before this report? I believe the answer to be "No."

A list of investigations of the VA that have resulted in only paper and words could go on and on, but let me go directly to my point. The Institute for the Advancement of Prosthetics, under my personal direction, has a waiting list of over 5,000 patients, persons seeking quality prosthetic care, many of them veterans. They await the outcome of this hearing with great anticipation. They, along with numerous others, look to myself and the IAP for leadership in upgrading the field of prosthetics and the individual care available to each of them. I will not let these people down.

I will watch with great hope for improved care for the veteran amputee which should come from this hearing. I will report that improvement with great joy the moment it is discernable. But likewise I will not hesitate to report to these people that this was just another VA hearing, with no tangible outcomes other than paper and words. Again, I respectfully thank you for the opportunity to speak.

Mr. MOTTL. Thank you very much, Mr. Stokosa, for bringing that to our attention. I think it will be very helpful.

[The prepared statement of Mr. Stokosa appears on p. 78.]

Mr. MOTTL. Next we will hear from our next witnesses, which will be Mr. Jerry Vilminot.

STATEMENT OF JERRY VILMINOT, PROSTHETIST, LANSING, MICH.

Mr. VILMINOT. Mr. Chairman, I would like to summarize my testimony.

Mr. MOTTL. Yes, please do.

Mr. VILMINOT. Mr. Chairman and members of the subcommittee, I would like to thank you for allowing me to present my views in this hearing. My name is Jerry Vilminot, and I have been a certified prosthetist since 1971 and a VA-qualified prosthetist since 1972. I am currently on staff at the Institute for the Advancement of Prosthetics in Lansing, Mich., in the capacity of associate clinical director.

From a clinical viewpoint, my subject is concerned with the inequities in treatment of the veteran amputee and the prosthetics provided by the Veterans' Administration.

Since post World War II and Korean conflict era, the Veterans' Administration has taken a degree of responsibility of disseminating and funding prosthetic research programs. The Veterans' Administration introduction of the clinical team approach gained rapid popularity, and in most cases resulted in a more comprehensive management program for patients with upper and lower extremity amputations.

It is believed by gathering the appropriate medical and paramedical personnel within a centralized location, a more scientific and quantitative approach could be given each patient's case. However, questions have been raised recently challenging the efficiency of such a clinic and the desirability of a more advanced approach concerning the prosthetic component selection and ultimate prescription rendering.

Summarizing, the U.S. participation in a 1978 survey of 19 veterans' organizations in 14 countries indicates that the major complaints of amputees are:

One, poor fitting or artificial limbs; two, unsatisfactory dissemination of knowledge of doctors and amputees regarding new prosthesis; three, lack of opportunity for input from patients; and four, inadequate measures to deal with phantom and stump pain.

Of the four major complaints, three could be lessened to a degree of tolerance by considering a somewhat different approach which is contrary to existing guidelines.

Poor fitting of artificial limbs. I have heard countless horror stories of amputees enduring extreme discomfort and pain caused by ill-fitting and inappropriately prescribed prostheses.

It has been discussed in numerous research studies that the transparent test socket is a most effective tool in evaluating socket fittings in both static and dynamic phases. By their use, it is my experience that the majority of fitting problems can be eliminated prior to fabrication of the definitive limb.

It is interesting to note that in 1960 the VA presented photographs of their experimentation with transparent test sockets in the Orthopedic Appliance Atlas. Their conclusion was that this technique was a most positive approach. Yet 21 years later they will not reimburse the prosthetists for their use.

Unsatisfactory dissemination of knowledge to doctors and amputees regarding new prosthesis and lack of opportunity for input from amputees. Through experience, I know that prosthetic clinics in the private sector as well as as in the VA systems have become grooved in to a basic prescription which systematically uses the most unsophisticated components available for the sake of what they call "expedient patient management". It is my opinion that this type of prescription rendering displays a total lack of imagination as it divides patients into no more than the simplistic categories of above or below-knee amputee.

Loss of countless man-hours, wasting precious components and materials occur when the prosthetists views on alinement, fitting and finishing procedures fail to be shared by doctors and therapists who are not aware of the latest technical advances. A device often had to be severely altered or sometimes completely done over for rather trivial reasons. It is unrealistic to expect all physicians and other related medical personnel to be knowledgeable and current, not only in their own specialty, but also in the prosthetic profession. One must consider the multitude of refinements and alterations that have been made in traditional devices as well as in the many entirely new sophisticated systems that have been developed.

On numerous occasions, I have observed prosthetic clinic chiefs who prescribe a carbon copy prosthesis with no other consideration than the fact this particular patient has worn the same type of limb for 25 years. In most cases, the patient is now allowed to participate in any decisions concerning prescription rationale and it is my conviction that most patients may actually be intimidated by such a vast host of professional personnel. Regardless of the manner in which the prosthesis is formulated, the patient is the ultimate recipient and he must function the best he can in pursuit of basic survival.

It is impossible for any one individual to determine in a brief clinical session which prosthetic components is best suited to an amputees needs. This fact should eliminate the customary written prescription by the amputee clinic chief. His primary input would be to confirm that there are no medical conditions present to contraindicate the use of a prosthesis. The most expedient method of establishing what is appropriate in each case is to allow the patient to ambulate on various components.

Then, utilizing the patients' input, the prosthetist can render a more intelligent prescription and recommend components that will be totally suited to the individuals needs. The Veterans' Administration can help accomplish this major goal of providing the most extensive and thorough evaluation by reimbursing the prosthetist for segments of time to be used by the prosthetist as he deems necessary.

The decision as to whether or not accepted standards and principles have been met in the fitting, alinement, and fabrication of the prosthetic device should be entirely left to the prosthetist.

In conclusion, the field of prosthetics has come of age, and so have its practitioners. The prosthetic practitioner is no longer simply a supplier of a mechanical product. He now provides professional services which offer the patient the highest degree of rehabilitation and quality of life as the end result of his experience, training, and education in a highly specialized field.

As a matter of record, the Veterans' Administration spent $8 million on prosthetic research in 1980. For fiscal year 1981, there are plans to petition Congress to fund this program for a record $9 million. This huge sum of money is being spent to develop new and sophisticated treatments for the disabled, yet the Government is not willing to pay for technology that is presently available. We don't necessarily need all new ideas, I think we need to apply the ideas we already have.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Vilminot appears on p. 91.]

Mr. MOTTL. Thank you very much for your statement, Mr Vilminot.

Mr. MOTTL. Next we will hear from Mr. Alan Finnieston.

STATEMENT OF ALAN FINNIESTON

Mr. FINNIESTON. Thank you, Mr. Chairman. I would like to summarize my statement.

Mr. Chairman and members of the subcommittee: Thank you for the privilege of appearing before the subcommittee and to present my views and experiences on prosthetic and orthotic rehabilitation of veterans.

I am a prosthetist and orthotist certified by the American Board for Certification in Prosthetics and Orthotics, president of Arthur Finnieston, Inc., my practice, and president of Maramed Precision Corp., which researches and develops systems for prosthetic, orthotics and orthopedics. My clinical association is with Variety Childrens Hospital and with the University of Miami Department of Orthopedic Surgery and Rehabilitation.

My colleagues and other speakers have referred to the final report of the Committee on Prosthetic Research in the Veterans' Administration—1976. To eliminate being redundant, and due to the limited time, I suggest a detailed review of this report. The problems are the same in 1981, but more acute.

It is my opinion that it is fiscally unsound to treat veterans requiring prosthetic rehabilitation under the present system. The GAO report, B-204389, September 22, 1981, states that 9,243 amputees were fitted with permanent prostheses at a cost of $9,330,000, or slightly over $1,000 a case. This is shared by 405 prosthetic facilities or a gross of $22,000 a year per facility. Needless to say, I have not held a VA contract for 15 of my 21 years practicing prosthetics and orthotics.

The VA through its contract policies—reducing services and rehabilitation to a bag of potatoes bid basis—have managed to economically influence the entire field of prosthetics and orthotics. The end result is a decadent system of delivery of services, equipment, and research for the handicapped person.

The GAO report also states that 1980 VA research and development funding is $3.4 million, and NIHR is $8.2 million in 1981. Developments from the research and development in the last 10 years are nonexistent from a practical day-to-day standpoint. Most of the new techniques, components, and technology used today are from the private sector. Therefore, it is my opinion research and development funding is placed in the wrong hands.

A perceived manpower shortage of prosthetists and orthotists has reduced the upgrading of requirements and education by the American Board for Certification in Orthotics and Prosthetics. Advanced aerospace technology, production, and equipment are available to be used in the field. However, funding for practical private development and education are nonexistent, thus falsely producing this manpower shortage.

In summary, the overall dollars spent for prosthetic services and research and development are an unrealistic ratio. Research funding to the private sector would produce more practical techniques and procedures, thus providing better service to the patient.

Thank you very much for your time and interest.

[The prepared statement of Mr. Finnieston appears on p. 93.]

Mr. MOTTL. Thank you very much, Mr. Finnieston. We appreciate your fine statement.

Mr. Stokosa, are there other prosthetists who use your technique of fitting artificial legs?

Mr. STOKOSA. Yes.

Mr. MOTTL. How many are there, approximately?

Mr. STOKOSA. I don't know. The technique has been available quite a few years, as I mentioned earlier. However, many prosthetists have come to the institute and spent a great deal of time and have taken back some of the ideas we have been working with and are reporting back to me that they are using some of these techniques.

Mr. MOTTL. What is your cost versus the VA contract cost?

Mr. STOKOSA. The cost is reported by us to be roughly two to three to four times more. The cost reflects the fact that we include education and training and a small amount of research and development within that cost factor.

Mr. MOTTL. So your cost is three or four times larger?

Mr. STOKOSA. Reflecting education and training costs in the cost of the prosthesis to the recipient.

Mr. MOTTL. Thank you.

The GAO report of September 22, 1981, reported that you treat 150 patients annually with a 5,000 waiting list. It would appear that your technique will have to be provided by other prosthetists if the demand is to be met.

Would you comment on this?

Mr. **Stokosa**. Well, I agree with that. I do feel that there needs to be a training program, if this technique is deemed better, that I do feel there needs to be some training to spread the quality of treatment out to other prosthetists.

Mr. **Mottl**. So basically, your technique is that plastic cup plus the training; is that basically your technique?

Mr. **Stokosa**. That is a basic part, yes, a major part.

Mr. **Mottl**. The Chair will recognize the gentleman from Michigan for questions.

Mr. **Dunn**. Thank you, Mr. Chairman.

In your final statement you said you hoped this wasn't just another VA committee hearing, so if we can get down to a couple of specifics I would like to be able to accomplish.

No. 1, you made the most graphic presentation of the variety of injuries that are possible, given the same set of circumstances. The use of the plastic seems to me, as a layman, very basic, that the plastic and the test patterns would be a far superior method than simply sticking your hand down into something you can't see.

In your opinion, why hasn't the VA adopted that, No. 1, and if the VA would adopt that, would you accept that as an accomplishment on the part of this committee?

Mr. **Stokosa**. To answer your first question, why the VA hasn't adopted that, I think that's a very good question. I don't have a solid answer. I have an opinion or a feeling.

The silicone jel soft lining was developed by the University of Michigan. My father and I were a part of the research and development of that. But it took the Veterans' Administration 9 years to investigate whether or not this was an improvement that should be included on their contract to allow veterans to be able to utilize this product. So historically I think we are looking at bureaucracy and redtape that takes a lot of time.

The second part——

Mr. **Dunn**. This has been around since 1948? Didn't the VA run a study on it in 1948?

Mr. **Stokosa**. No, in 1960 it was published the first time. However, if it was earlier, I'm not aware of it.

Mr. **Dunn**. The other thing you talked about, your cost at the institute runs two, three, four times as high, and yet some of our veterans have testified that they have had five or six legs. If the cost is two or three times higher and the Veterans' Administration won't accept it, but if you have to get five or six legs and did it right the first time, wouldn't the taxpayers as well as the veterans be ahead?

Mr. **Stokosa**. Definitely.

Mr. **Dunn**. Would you see it as an improvement in the system right now—and correct me if I'm wrong—the veteran, if he wants to be reimbursed for even $1, he has to go to a VA-approved hospital or VA-approved contractor; isn't that the way it works?

Mr. **Stokosa**. Yes. In fact, there is a point that many veterans—I recall one specifically recently—that was refused by the VA to have a noncontracted prothetist do the fitting, which was me, because of excessive costs.

Mr. **Dunn**. So if I'm a veteran who had five or six legs that have cost the Federal Government $1,200 apiece, and yet I go to someone who isn't VA-approved and I pay out the $3,000 myself, I can't get reimbursed for even $1,200?

Mr. **Stokosa**. Right. That was my point. The veteran asked the VA if they would pay their share and let him pay the difference; and the answer was no.

Mr. **Dunn**. So that option is not available to the veteran today?

Mr. **Stokosa**. That's correct.

Mr. **Dunn**. If that were changed around, would you see that as something concrete this committee could accomplish for you?

Mr. **Stokosa**. Yes.

Mr. **Mottl**. If the gentleman would yield, I think that is an excellent suggestion to the VA, to give this option to the veteran to pay the difference.

Mr. **Dunn**. One question for Mr. Finnieston.

How does the VA reimbursement impede your ability to handle people's problems?

Mr. **Finnieston**. Well, it is much in the same way as Mr. Stokosa. We just don't see any VA patients unless we see them privately.

Mr. **Dunn**. In other words, unless we have rich veterans, they don't get the kind of treatment they deserve?

Mr. **Finnieston**. That is correct.

Mr. **Dunn**. I thank the chairman very much.

Mr. **Mottl**. Thank you, Mr. Dunn.

I really like that suggestion and I would hope that Dr. Brown will carry that back with him. I would like to talk with him privately about that option. I would think that is reasonable and the taxpayers still won't have an additional burden on that, but if there could be some contribution by the Government.

Does distinguished counsel have a question of the panel here?

Mr. **Casteel**. Yes, Mr. Chairman. I have a question for Mr. Stokosa.

I have before me here the GAO report of September 22, and in commenting on the Institute for Advancement of Prosthetics, the GAO said—and this is a direct quote: "However, other prosthetists and surgeons we talked to believe that routine use of the multiple transparent test sockets was unnecessary."

Would you care to comment on that, Mr Stokosa?

Mr. **Stokosa**. Yes; I would like to start out with a question: Have those surgeons and those prosthetists utilized in any way, shape, or form, the transparent test socket? Have they had experience; have they investigated it. There has been no scientific investigation in this area.

Mr. **Casteel**. If I may, let me quote from the preceding paragraph what they say. It says, "The Director," meaning yourself, I believe, "who is a prosthetist, emphasized that he does not believe one test socket is adequate, but he knew of no other prosthetist who used this approach."

Mr. **Stokosa**. That's exactly true. However, there are a handful of prosthetists, and they are gaining in number, who have realized the benefits. This has been around for 20 years and it has not been allowed to be paid for by the VA, so that has suppressed it.

If you would look at the 1981 atlas that was printed by the American Academy of Orthopedic Surgeons, in collaboration with the Veterans' Administration, a chapter in that atlas which is about 600 pages thick is written by the director of prosthetics, Anthony Staros, and co-authored by Burt Goralnik, who is a technical adviser to him, and they state, and I quoted in my written statement, "a relatively inexpensive and expeditious means for a direct visual assessment of the limb-socket interface under static and dynamic conditions is possible; some of the obstacles to optimum fit and training, such as residual limb pain" and they're talking about the stump there "and skin breakdown are substantially reduced."

The VA, on the one hand, is supporting this very strongly at a certain level. At a higher level, where you pay for it, it is disregarded. So there is that conflict within the VA right there.

Mr. **Casteel**. Well, I am not quite sure I understand that. But be that as it may——

Mr. **Stokosa**. That was the quote of the director of prosthetics for the Veterans' Administration, Anthony Staros, and his technical adviser, who is a prosthetist. They believe the transparent test socket is a valuable, inexpensive, expeditious means of providing a comfortable fit.

Mr. **Casteel**. Was he making specific reference to your procedure, your technique?

Mr. **Stokosa**. They are similar. A different plastic. There are five different clear plastics.

Mr. **Casteel**. Thank you, Mr. Chairman.

Mr. **Mottl**. Thank you.

The Chair would like to thank this distinguished panel for their invaluable contribution this morning. I think you have contributed a lot and we want to extend our deep appreciation to you this morning.

Thank you very much for being with us.

Mr. **Mottl**. Next we will hear from some of our distinguished service organizations. First of all, Mr. Donald H. Schwab, director, national legislative service, Veterans of Foreign Wars. Mr. Schwab, if you could come to the witness table first.

We will reserve our questioning until all three service organizations have testified this morning.

Welcome, Mr. Schwab. It is nice having you with us this morning. Your entire statement will be submitted to the record, without objection, and you may proceed as you deem fit.

STATEMENTS OF DONALD H. SCHWAB, DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS; R. JACK POWELL, EXECUTIVE DIRECTOR, PARALYZED VETERANS OF AMERICA; AND CHARLES E. JOECKEL, JR., DEPUTY NATIONAL LEGISLATIVE DIRECTOR, DISABLED AMERICAN VETERANS

STATEMENT OF DONALD H. SCHWAB

Mr. **Schwab**. Thank you, Mr. Chairman. I will summarize my statement as requested.

My name is Donald H. Schwab, and it is my privilege to represent the 1.9 million men and women of the Veterans of Foreign Wars as their national legislative director.

Mr. Chairman, the Veterans' Administration medical and prosthetic research program has brought benefit not only to veterans but all mankind and has brought worldwide acclaim to the Veterans' Administration in the form of many awards and honors to research personnel, including two Nobel Prizes.

Mr. Chairman, the VA operates an extensive prosthetics treatment program throughout the Nation. Our field representatives who interview veterans and amputees when they survey VA medical centers, our service officers who have contact with veterans and some who are amputees, and members of our professional staff who themselves wear prosthetic appliances, almost without exception have nothing but the highest praise for the appliances furnished and the maintenance thereof by the Veterans' Administration. A few complaints that we do hear are readily resolved because our field representatives and our professional staff members are able to put the veteran in contact with the proper person at the proper level within the VA to resolve the problem. Most of the problems, Mr. Chairman, seem to be the failure on the part of private contractors to make timely delivery of prosthetic appliances or sensory aids or whatever.

Having said the foregoing, our primary concern at this point in time, Mr. Chairman, is with the budget cuts that have been sustained by the Medical and Prosthetic Research Division of the Veterans' Administration and the budget figures are sort of nebulous now. We have had so many different figures put forth in the last 10 months. But it appears that medical and prosthetic research is cut about $27 million and the President just recently deferred $2.5 million for medical and prosthetic research.

Checking into this, just what it means, it means personnel, almost without exception, in medical and prosthetic research. Informal information available to me indicates that if cuts in the amount of $27 to $28 million hold, that we are talking about a 25- to 30-percent reduction in personnel within medical and prosthetic research. You translate these dollars into research programs, and I understand a research program typically runs about $1 million, so you're talking about the cessation or cancellation of, if it's $27 million, it's 27 research programs. We believe this is quite regrettable because of the fine work that has been done in research in the VA. And also with this cut in funds, as I said, it means personnel and the medical and prosthetic research program of the Veterans' Administration has brought physicians into the VA who would otherwise be unavailable and it will set this program back, personnel-wise, I am sure several years.

This concludes my testimony. I would be happy to respond to any questions you may have.

[The prepared statement of Mr. Schwab appears on p. 94.]

Mr. MOTTL. Thank you very much, Mr. Schwab, for your fine statement this morning.

If you would just remain at the witness table, we will have R. Jack Powell, the executive director of the Paralyzed Veterans of America, come to the witness table. Mr. Powell, it is certainly a pleasure having you with us again this morning and we look forward to your testimony.

STATEMENT OF R. JACK POWELL

Mr. POWELL. Thank you, Mr. Chairman. It is always a pleasure to see you and Congressman Dunn. Mike Delaney, our national president from your home State, requests that I extend his best regards.

Because of the lateness of the hour, I am even going to spare you the prepared oral statement that we had.

Mr. Chairman, I think that you have, in part, recognized many of the problems that the VA has in the area of prosthetics. You wrote a letter to Representative Boland on October 6 in which one of the issues you addressed was the proposed additional reduction of $22,484,000 in medical and prosthetic research.

It is an obvious fact that for many years following World War II the Veterans' Administration was the recognized leader in the world in the area of prosthetics. The VA has always relied principally on outside contractors for the provision of materials and certain services in the area of prosthetics and many of the major problems that the VA encounters in prosthetics come from outside contractors.

All of PVA's 12,000 members utilize prosthetic services and the most frequent complaints that we get involve non-VA contractors providing or failing to provide services or prosthetic devices to those that use them.

One of the problems that has existed in the VA system has come about within the last 5 years. A reorganization concept that is decentralized, control of budget, control of training, control of personnel, control of products, out of the central office and down to local areas. There is a tremendous amount of in-house bickering and fighting that takes place within the VA system over who is going to control what, over who is going to do what research and in what area.

At the same time, I don't believe that the system would work if it wasn't for the large number of dedicated—extremely dedicated—personnel who are involved in the prosthetic system throughout the VA.

The fact remains that one of the problems that PVA sees with such things as Circular A-76 and recommending its outside contracting is that it further deludes the control that the Central Office and the top level of prosthetics has over those kinds of devices and over the fulfillment of those kinds of contracts. We believe that this committee and the new Administrator can effectively address these problems. The Administrator said he wants to do management studies. We suggest the area of prosthetics is a very appropriate area for the Administrator to conduct a study of the problems of decentralized management and decentralized control and decentralized budgeting processes. We hope that this committee will stimulate the Administrator into looking into that area.

We also hope this committee will take whatever action it can to insure that the necessary funding is provided and is available in one place, from one person or one group of people, to carry forward prosthetics programs.

I also want to thank you, Mr. Chairman, for your statement earlier this morning that there will be a hearing during second session on SCI research. We are very interested in that.

Thank you, sir.

[The prepared statement of Mr. Powell appears on p. 95.]

Mr. **Mottl.** Thank you very much, Mr. Powell, for your outstanding statement. We certainly will stimulate the Director to do something in this area.

Last but not least we have Mr. Charles E. Joeckel, Jr., deputy national legislative director, Disabled American Veterans.

STATEMENT OF CHARLES E. JOECKEL

Mr. **Joeckel.** Thank you, Mr. Chairman. I also will summarize my statement.

Mr. **Mottl.** All of your statements will be submitted into the record in their entirety, without objection.

Go ahead, Mr. Joeckel.

Mr. **Joeckel.** I would like to state first that our organization does not receive a lot of complaints regarding the VA prosthetic service. What we do receive in the form of complaints has to do with delivery time. I think most veterans have resigned themselves to the fact that it does take quite a bit of time to have a properly fitted prosthetic device delivered.

In my written testimony you will find that I spent considerable time on the GAO report. The reason for that is that we are concerned about several statements just accepted as a matter of fact.

For example, on page 5 of the report it stated that surgeons and amputees said that some pain is unavoidable. On page 6, surgeons on the Committee on Orthotics and Prosthetics of the American Academy of Orthopedic Surgeons, told us that amputees will have problems with their prosthetics and some amputees would never be satisfied.

We point these statements out, Mr. Chairman, because we simply don't believe that's the case, nor should it be accepted as a matter of fact. We think through better research and development that these statements can be refuted.

Much has been said today about VA research recently. I would like to point out also in the GAO report that the Committee on Orthotics and Prosthetics of the American Academy of Orthopedic Surgeons again stated that in the past 15 years much of the improvement in artificial limbs has been in refinements to establish techniques and devices; for example, replacing wood with plastic laminates.

In 1976 the National Academy of Sciences stated, quite frankly, that the United States has lost its world leadership. In the September 1980 issue of the Orthodics and Prosthetics, Journal of American Orthotic & Prosthetic Association, they make the statement that "A review of the fall 1979 issue of the Bulletin of Prosthetics Research reveals that a relatively small emphasis is being placed on limb prosthetics and orthotics." They go on to say "Just why this is so is not clear."

I would like to point out at this time, Mr. Chairman, that prior to 1945 the various elements of the VA prosthetic service were scattered throughout the VA. After World War II and the influx of amputee veterans, the VA brought all of its services under one head. This served the VA well for a long period of time and much technological advancement occurred.

In 1973, however, the VA was reorganized, particularly in the Department of Medicine and Surgery, and the various programs of prosthetics, training and others, were again scattered out through various departments. In our view, the splintering of the various prosthetic services has been harmful to the program. We have already stated that research has fallen behind the rest of the world, that training that occurs in the VA takes place under the direction of an office located in California; distribution of prosthetics equipment has been placed under the supply service. There is little coordination between research training and the prosthetic service.

The VA Rehabilitation Engineering Center in New York has been placed under the 1st Medical District, and we understand there is little coordination betweeen VAREC and Central Office. In addition, we have learned that approximately $1 million in funds have been skimmed off VAREC and distributed throughout the district in other health care programs.

Mr. Boner referred earlier today to investigations by the Inspector General regarding inventories at VAREC, and we are aware of another investigation by the Inspector General as to why VAREC uses inferior products. But this isn't the point I want to make today. Our point is that we think the original reasons for bringing the prosthetics under one service in 1945 was a good idea then and it is a good idea now. It should be a program answerable to one person or another, obviously ultimately the Chief Medical Director and the Administrator today, but more control is necessary.

Finally, we don't believe that the difficulties suffered by service-connected amputee veterans should be rationalized by statements that some amputees will never be satisfied or that discomfort is a normal part of wearing an artificial device. Through better leadership and management, as well as greater emphasis on research, we think these kinds of statements can be refuted.

Finally, Mr. Chairman, I would like to recognize the findings of the report of the National Academy of Sciences in 1979 regarding the causal relationship between amputation and the development of heart conditions. We think it would be a good idea for the VA to develop an outreach program to advise veterans as to the benefits they are entitled to or are eligible for under the prosthetics program, particularly in the area of physical exercise equipment where they can exercise and stave off, probably, the development of a heart condition.

Also I want to address the fact that Mr. Stokosa was up here earlier and it was suggested that perhaps the VA ought to reimburse him or any prosthetist for partial payment toward the proper fitting of a prosthetic appliance. We simply don't believe that a service-connected disabled veteran should have to pay any particular part of any bill to be properly fitted.

Thank you very much.

[The prepared statement of Mr. Joeckel appears on p. 100.]

Mr. Mottl. Thank you very much, Mr. Joeckel, for your fine statement. We certainly appreciate it.

Mr. Powell, I just want to inform you that I have introduced a bill, H.R. 4851, to make permanent a bar on application of A-76 to the Department of Medicine and Surgery. So hopefully we can put an end to that circular once and for all.

Mr. POWELL. We certainly support your bill.

Mr. MOTTL. Mr. Joeckel, in the closing part of your statement you refer to the possible option—and it was suggested by Mr. Dunn that there be a possibility that if a veteran would not be happy going to the Veterans' Administration, that he could seek outside help with this new technique by Mr. Stokosa or a similar prosthesis, that this would at least give the veteran the option as to whether he wants to seek the Veterans' Administration aid in getting fitted or outside.

What do you see wrong with that option, knowing the limitations of funding that increase to $5,000 for every veteran?

Mr. JOECKEL. Well, first of all, there ought to be funding available.

Mr. MOTTL. I agree 100 percent, but if there isn't——

Mr. JOECKEL. First of all, if the VA finds it an unacceptable practice as to what Mr. Stokosa does, then they should be able to lay it out factually as to the reasons why. And if they are unwilling to develop this program within the VA, or with other contractors, then they should have an obligation to pay for those veterans that can only be fitted by that kind of a prosthesis. That is our view.

Mr. MOTTL. Mr. Powell, Mr. Schwab, do you have a comment on that question? Should the veteran be given that option?

Mr. POWELL. It is an interesting possibility. I think that we have some reservations about that potential, however. Not to paint everybody with the same brush, it has been our experience that there are those who are less than scrupulous in the business of supplying prosthetics. We have seen wheelchairs, as an example, go from anywhere from $400 up to $2,800 for the same wheelchair. There is a concern that the part of the process of approving one contractor or another contractor is a certain degree of some kind of comfortability, that the veteran will not be taken unfair advantage of. I don't know how you would address that if you start saying that somebody can go anywhere, to any prosthetist, and receive that service.

Mr. MOTTL. Thank you very much.

Mr. Schwab?

Mr. SCHWAB. Mr. Chairman, everybody wants a piece of the action, and there are those in Congress and outside of Congress who would dismember and eventually dismantle the entire VA medical and health care system. The VFW has over the years opposed any such moves, and let me make it crystal clear that we will continue to oppose any moves in this direction in the future with every resource at our disposal.

This suggestion would seem to be a step in that direction.

Mr. MOTTL. Any questions of this distinguished panel, Mr. Dunn?

Mr. DUNN. Really a statement. I thank Mr. Powell and his colleagues. I think the two of you have touched on some of the problems.

Mr. Powell's written testimony, if I could quote from it, "We hope this subcommittee and the VA Administrator will find a way to revitalize the VA prosthetics program and make them once again an internationally recognized national resource."

I think Mr. Schwab touched on the areas of budget constraint, and we are all operating under that. I wish you had been here for the earlier testimony; you would have been aware of the same things that we are, that it goes beyond budget constraints, that there are some problems in the VA, and these gentlemen have touched on it as well as the witnesses.

I remain committed to providing for the veterans the best possible artificial limbs, and if we have to go outside the VA to do that for our veterans, then we ought to be able to take a look at that possibility.

I thank the Chairman and those that testified in front of us today.

Mr. MOTTL. Thank you.

I would suggest—First of all, we have some questions here from Mr. Hammerschmidt that we would like to have proferred to the witnesses, and then answered in writing. The record will remain open and, if there is no objection, this will so be done. These are addressed principally to the VA.[1]

Mr. DUNN. I would ask also, Mr. Chairman, that the statements of Dr. Akeson [2] and Dr. Nickel [3] be included in the record.

Mr. MOTTL. Without objection, they will so be included.

I would like to suggest at the conclusion of this hearing this morning, so that we do something constructive on this important topic, that Dr. Brown—and you invite Dr. Custis with you. We have this distinguished panel, these three gentlemen here before us, that you meet with us, and also Mr. Dunn and Mr. Casteel in my office next week at an apprpriately mutual time to see where we go from here and do something constructive in this area for the American veteran.

Would you all agree with me, that we should meet in my office next week? We can coordinate this through my distinguished right arm here, Mr. Casteel. OK?

NOTE.—On November 18, 1981, a meeting was held in 340 Cannon House Office Building. In attendance were the Honorable Ronald M. Mottl; the Honorable Jim Dunn; staff members of the Subcommittee on Hospitals and Health Care and the Members' offices; Dr. William Jacoby, Deputy Chief Medical Director of the Veterans Administration and members of his staff; representatives of the General Counsel of the Veterans Administration, and representatives of the Disabled American Veterans' Paralyzed Veterans of America; and the Veterans of Foreign Wars.

Following a discussion of the VA's prosthetic research and development program and the work being done at the Institute for the Advancement of Prosthetics, it was agreed that the VA would send a committee of experts to the IAP to further view the techniques being used by Mr. Stokosa.

On December 23, 1981, the following letter was received from Dr. Donald Custis:

VETERANS ADMINISTRATION,
DEPARTMENT OF MEDICINE AND SURGERY,
Washington, D.C., December 23, 1981.

Hon. RONALD MOTTL,
Chairman, Subcommittee on Hospitals and Health Care of the House, Committee on Veterans' Affairs, Washington, D.C.

DEAR MR. CHAIRMAN: I regret to inform you that Mr. Jan Stokosa has denied the Veterans Administration's request for a special committee of experts and two veteran amputees to visit the Institute for the Advancement of Prosthetics (IAP) on December 15, 1981. In accordance with a meeting held in Seattle, September 11,

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[1] See p. 105.
[2] See p. 103.
[3] See p. 103.

1981, with Drs. Ernest Burgess, Margaret J. Giannini, and Mr. Jan Stokosa, it was agreed that such a visit would take place in the early part of December 1981. At that time, it was mutually agreed that the schedules of Dr. Burgess and Mr. Stokosa did not permit an earlier visit. I will briefly try to outline the sequence of communication between Dr. Giannini and Mr. Stokosa.

Dr. Burgess, who is Clinical Professor of Orthopedic Surgery, School of Medicine, University of Washington, is the committee chairman. He and the other members had acceded to our request and allowed time in their busy schedules for an early visit. The other members are: Colin McLaurin, Rehabilitation Engineer, Director, Rehabilitation Engineering Center of the National Institute on Handicapped Research at the University of Virginia (Charlottesville); Mr. Leigh Wilson, Chief Prosthetist, San Francisco VA Medical Center; Mr. Drew Hittenberger, Certified Prosthetist, Seattle VA Medical Center; Marilyn Bergner, Ph.D., Associate Professor, Department of Health Services, University of Washington, Seattle, Washington; Clarence June, 7839 East Ardwen, Downey, California; and Bill Kruse, 8722 Imperial Highway, Downey, California.

On December 1, 1981, Dr. Giannini called Mr. Stokosa in order to confirm the committee's visit. Mr. Stokosa was reluctant for this visit to take place. He thought, in view of the Hearing of the Subcommittee on Hospitals and Health Care of the House Committees on Veteran's Affairs on November 4, 1981, that he should be guided by their instructions. He also informed Dr. Giannini that it was his understanding that "the VA would be sending veterans out to be fitted" before any visits would take place. Dr. Giannini informed Mr. Stokosa that she had no knowledge of this arrangement, but only confirmed that the Subcommittee made a recommendation that two veteran amputees accompany the committee to Lansing, to which the VA agreed. Dr. Giannini requested that when Mr. Stokosa made a decision concerning the visit, he contact her to confirm or cancel the meeting. He said he would contact her in two days.

After three days of not hearing from Mr. Stokosa, Dr. Giannini called Mr. Stokosa on December 4th. At the time of the call, Mr. Stokosa was unavailable. On the same afternoon, Mr. Stokosa returned Dr. Giannini's call and was very hostile because she was actively inquiring whether the visit would take place on December 15, 1981. He commented that he thought the visit would be useless unless the VA sent veterans for prosthetic fittings. Mr. Stokosa indicated that he was informed that the VA would send, at the VA's expense, a number of veteran amputees for prosthetic fittings by the IAP staff. Dr. Giannini stated that, having been present at the November 18th meeting, she did not recall this agreement. Dr. Giannini asked Mr. Stokosa whether she had interpreted their conversation as being accurate in that he was refusing to allow the December 15th visit to IAP. He kept responding that he "couldn't answer that." Therefore, the invitation for the committee to visit the IAP was not extended or confirmed by Mr. Stokosa at that time. Dr. Giannini informed him that she would relay his decision to me.

On December 8th, Mr. Stokosa called Dr. Giannini and reported that he was considering the committee visit at a later date. He said he would confirm the date for the visit within 24 hours. To date there has been no further response from Mr. Stokosa.

It is unfortunate that this meeting could not transpire. It might have been a useful beginning, if indeed any changes in prosthetic fittings were indicated and could be initiated as a result of this visit. Let me assure you that the Veterans Administration is interested in carrying out the original request, if it is possible.

Sincerely,

DONALD L. CUSTIS, M.D.,
Chief Medical Director.

Mr. MOTTL. I want to thank everybody for partaking in this important hearing this morning. If there is no further business to be brought forth, the subcommittee will stand adjourned.

[Whereupon, at 11:33 a.m., the subcommittee was adjourned.]

APPENDIX

Prepared Statement of Dr. D. Earl Brown, Jr., Deputy Assistant Chief Medical Director for Professional Service, Veterans Administration

Mr. Chairman, I appreciate the opportunity to be here to discuss the Veterans Administration prosthetic service and prosthetic research programs.

CLINICAL CARE

Following World War II, the Veterans Administration began efforts which have led this country in the management and rehabilitation of amputees. Rehabilitation, Prosthetic and Sensory Aids Centers were established in various VA hospitals. In 1970, due to increased need, eight VA medical centers were designated to receive and rehabilitate veterans with major amputations and sixty additional medical centers were designated to treat uncomplicated, single extremity amputees. Today there are 193 prosthetists and orthotists throughout the VA health care facilities. There are sufficient numbers or regional specialist in the VA system to provide excellent care for all amputees in all regions of the country.

In the past, the reason for most amputations was trauma. Today over 80 percent of amputations are performed because of ischemic diseases such as diabetes and arteriosclerosis. New techniques have evolved using posterior skin flaps, early prostetic applications, and Xenon 133 clearance studies of affected limbs and other diagnostic modalities that have contributed to more accurate determination of level for amputation. These advances have resulted in more rapid healing without stump infections, early ambulation, decreased rehabilitation time, decreased length of hospitalization, and decreased mortality. Most of the advances in care have been the result of research sponsored by the Veterans Administration.

Refinements and advances in vascular surgery have reduced or delayed the need for amputations. Patients with advanced peripheral vascular diseases are now being diagnosed earlier due to the introduction of new, non-invasive diagnostic methods. This permits increasing numbers to be treated medically, thus avoiding the necessity of amputation. Similarly, new techniques allow surgeons to determine the most distal amputation site. Thus many more patients have below knee amputation which improves prosthesis acceptance and rehabilitation. Notwithstanding these advances, however, with the aging of the veteran population, the VA is likely to experience a gradual increase in the number of amputations being performed. In fiscal year 1980, 4938 lower extremity amputations were performed in VA hospitals. Within the same period, 64 upper extremity amputations were done.

Veterans hospitalized in VA facilities who have undergone an amputation are referred to the Rehabilitation Medicine Service by the attending physician. A physical therapy program of pre-prosthetic training is initiated to develop the strength and stamina necessary to use an artificial limb. A great deal of emphasis is placed on stretching exercises to avoid flexion contractures. Once the veteran has developed adequate strength and stamina, he is referred to the Prosthetic Clinic Team.

The Prosthetic Clinic Team is headed by a specially trained physician (a Chief of Rehabilitation Medicine Service or an Orthopedic surgeon) who is charged with the direct professional responsibility for all patients referred to the team. Other members include other physicians with a knowledge and interest in rehabilitation, a commerical or a VA prosthetist, a physician therapist and prosthetic representative.

The team examines the patient and when medically indicated prescribes an appropriate training limb. Most training limbs are fabricated in VA Orthotic Laboratories; however, some are purchased from commerical limb manufacturers under VA decentralized contracts.

The veteran is trained by physical therapy to use his training prosthesis in day to day activities, such as stair climbing and walking up and down inclines. This training takes approximately 2 to 3 weeks after which the veteran is discharged from the hospital and followed by the Prosthetic Clinic Team on an outpatient basis. Many veterans return to their previous employment using these training limbs.

A permanent prosthesis is prescribed after the veteran has exhibited the ability to use the training limb and has obtained maximum shrinkage of the remaining limb. The team considers all the available components, such as sockets, knee assemblies, suspension components, endoskeletal vs. exoskeletal construction, feet, etc., in the development of an appropriate prescription. The veteran is given the prescription for the prosthesis and may choose the permanent limb from any commercial facility that has a VA contract. There are approximately 400 contractors participating in this decentralized contract. It is the largest negotiated contract in the VA system. All contractors must employ a prosthetist who meets VA qualification standards before the award of a contract is considered. Each facility is inspected prior to the award.

Once the veteran's limb has been fabricated, the Prosthetic Clinic Team evaluates the prosthesis and recommends adjustments. The veteran receives additional training sufficient to insure that he can use the prosthesis effectively. Follow-up visits are scheduled to monitor the patient's progress and use of the prosthesis. Newly amputated veterans are usually followed for one year. However, the period is extended if the physician believes longer follow-up is required.

Outpatients who are eligible for continued prosthetic services and who require artificial limbs are scheduled for evaluation by the Prosthetic Clinic Team. All past records are secured and reviewed prior to seeing the veteran. New developments in the field of prosthetics are discussed with the veteran and an appropriate prescription is developed. The requirement for additional training and follow-up is determined by the needs of the veteran patient.

These procedures for the treatment of both inpatients and outpatients work well for the vast majority of amputees. Our current replacement rate indicates that most veterans are using a prosthesis for four to five years. However, a small number of patients have difficulty adjusting to an amputation and an artifical limb. The amount of pain and suffering an amputee experiences differs. An individual's reaction to amputation is often affected by age, general physical condition and mental outlook. Other factors contribute to patient discomfort, such as stump changes and shrinkage, phantom sensations, weight bearing pressure on soft tissue, and the unaccustomed weight of a prosthesis. These factors vary in importance from patient to patient. Our experienced professionals are accustomed to managing such variations and most are treated successfully locally. However, for especially complicated cases the Veterans' Administration Rehabilitation Engineering Center in New York and the Prosthetic Research Center, Seattle, Washington, are utilized.

We recognize the services offered by the Institute for the Advancement of Prosthetics. A GAO study in 1981 pointed out that the differences between the Institute's approach to providing an artificial limb and that generally used by other prosthetic facilities involves the routine use of multiple test sockets, patient participation in selecting prosthetic components, and a great deal of time spent with each patient. Other prosthetists and surgeons that were interviewed by the GAO believe that the routine use of multiple transparent test sockets is unnecessary and that numerous fittings should be the exception rather than the rule.

Although we are confident our system provides excellent care to the veteran amputee, we are always eager to explore new methods and technology which may improve our services. Therefore, Rehabilitation Engineering and Health Service Research and Development Services are to initiate an evaluation of the methods used by the Institute for the Advancement of Prosthetics and those used throughout the industry. If this study reveals improved prosthetic designs or fitting techniques, we will take whatever steps are necessary to provide improved services to veterans.

I would emphasize that prosthetics is a rapidly developing field. In that connection, we in the VA have emphasized the importance of keeping our personnel abreast of the latest developments. The VA Rehabilitation Engineering Center (VAREC) in New York monitors what is occurring in the field of prosthetics. They share what they learn by means of a quarterly publication, which is directed primarily to VA health care providers. The Office of Technology Transfer under the Rehabilitation Engineering Research and Development Service has the responsibility for publishing the Bulletin of Prosthetics Research which is the only journal devoted entirely to the publication of scientific and technical papers in the broadening field of rehabilitation engineering. This area now involves not only Prosthetic and Sensory Aids but many other applications of science and technology to improve the quality of life of the severely disabled. The Prosthetic and Sensory Aids Service at VACO also distributes newsletters and other publications to update our personnel. Our sponsorship of numerous seminars, workshops and professional meetings adds another dimension to this effort to continuously educate our personnel and share information with professionals outside the Veterans' Administration.

RESEARCH

An overview of the period from 1945 to 1973.

The Prosthetics Research Program in the Veterans' Administration was created at the end of World War II. It was formed as an adjunct to the clinical delivery of prosthetic services. In the period from 1945 to 1947, this program was funded by the Office of Scientific Research and the War Department. The Prosthetics Research Program was conducted under the technical direction of an Advisory Committee of the National Academy of Sciences-National Research Council (NAS-NRC). In 1947, the VA began making direct contracts for research and development under the guidance of the NAS-NRC. The VA assumed the funding for the entire program, including the NAS-NRC costs in 1947. The Advisory Committee operated under several different names until July 1947, when it became known as the Advisory Committee on Artificial Limbs in the Division of Engineering and Industrial Research (NAS-NRC). The VA Prosthetics Research Program was managed by the Research and Development Division of the Prosthetics Service in the Department of Medicine and Surgery.

From 1945 to June 1947 two significant contract programs were begun. The first was with Northrup Aircraft, the second with the University of California-Berkeley (UC-BL). Northrup contributed novel designs for light weight artificial limbs and developed the first modern suction socket which utilized laminated plastics. University of California-Berkeley conducted the classic, fundamental studies on human locomotion, or gait analysis. These studies included: limb and pelvis rotation during locomotion; ankle rotation; patterns of muscle activities in the lower limbs and trunk; development of "stop-motion" analysis using interrupted light; glass walkways; force plates; material testing; and, structural design. These studies led to improved analysis of artificial limb alignment, improved suction socket design and reduced pain in amputee fittings.

The U.S. Plywood Corporation and the National Research and Manufacturing Company each contributed important developments in light weight plastic laminates. These new materials were lighter, stronger and more easily formed than the wooden core normally used at that time.

Toward the end of this period (1945-1947) two new contracts were begun with facilities that would play a major role in the VA program in the ensuing years. The first was with the University of California-Los Angeles (UCLA) and the second was with Northwestern University. University of California-Los Angeles was beginning to conduct what would become the classic upper limb motion analysis studies on a scale comparable to the University of California-Berkeley lower limb locomotion analysis. Northwestern University began an evaluation program to determine the quality and efficacy of the newly developed artificial limbs.

In June 1948, Public Law 729 was passed specifically authorizing $1 million a year for the Prosthetic Research Program. It also authorized the Administrator to "make available to any person the results of such research . . . . (which) might result in improved prosthetic appliances for all disabled persons." Unfortunately, the $1 million budget became a limit that was not removed until August 1962 by Public Law 87-572 that allowed "the appropriation of such funds as were necessary".

The number of improvements, innovations and entirely new developments during the period from 1948 to 1962 were too numerous to mention in detail. However, the major accomplishments reflect the impact that the VA program had on the prosthetics field. These major achievements were: development of the casting techniques for sockets; development of plastic laminates for sockets; the improved suction socket (University of California-Berkeley); the quadrilateral casting technique with adjustable brim guides for total contact sockets on above knee amputees; the patellar-tendon-bearing (PTB) socket for below knee amputees (University of California-Berkeley) (these last three advances allowed for self-suspending sockets); the Solid-Ankle Cushion-Heel (SACH) foot (University of California-Berkeley); the safety lock knee; the pneumatic swing-control knees (University of California-Berkeley); the hydraulic swing-control knee (Mauch); and gait analysis for improved fitting and alignment of artificial legs.

Equally significant advances were being made in a concurrent program in the education of the prosthetists. In 1948, the NAS-NRC had formed a parallel committee to the Committee on Artificial Limbs, called the Committee on Prosthetic Education and Information (CPEI). In this active period from 1948 to 1962, the Committee on Prosthetic Education and Information arranged training sessions on the most recent advances; the suction socket, the Patellar-Tendon-Bearing socket, the laminated plastic techniques, and the fitting and alignment techniques. Under the guidance of the Committee on Prosthetic Education and Information, the VA prepared classic texts, applications manuals, training guides, training films and slides, and sponsored training courses for prosthetists and physicians on a nation-wide basis. The Committee on Artificial Limbs (NAS-NRC) was reorganized in 1959 to become the Committee on Prosthetics Research and Development (CPRD). In 1963, the Committee on Prosthetic Education and Information (NAS-NRC) became the Committee on Prosthetic-Orthotic Education (CPOE). These two Committees influenced all prosthetic R&D programs in the United States from 1947 until the Committees were dissolved at the end of 1976.

As planned, these education and training programs had a marked impact on the clinical delivery of prosthetics services. The VA sponsored the initiation of two training programs in accredited universities to assure that the prosthetists who provided limbs to veteran beneficiaries were properly trained. Lower limb fitting techniques were taught by University of California-Berkeley, and, the upper limb fitting techniques were taught by University of California-Los Angeles. As a result of these training sessions, the first university-level prosthetic education program was begun at University California-Los Angeles (USCA) in 1953 under VA R&D financing. The New York University began the second university-level prosthetic education course in 1956.

In 1954, Congress enacted the Vocational Rehabilitation Act that authorized the Office of Vocational Rehabilitation (DHEW) to support research and education in rehabilitation. The Office of Vocational Rehabilitation (DHEW), which had begun sharing the cost of the Committee on Prosthetics Research and Development and the Committee on Prosthetic-Orthotic Education (NAS-NRC), was given control of the previously VA funded program at Northwestern University. Subsequently, the Office of Vocational Rehabilitation (DHEW) formed the third prosthetic education program at Northwestern University in 1959.

These three university programs provided the foundation on which prosthetic professionalism was built. Artificial limbs could not be fitted to a veteran unless the prosthetist had a VA qualification status as provided by the training courses. Thus, the VA was simultaneously developing excellent new prosthetic devices, and also training capable prosthetic service providers. Since these prosthetists also treated non-veteran amputees, the VA fulfilled its mandate to make the results of its research available to all handicapped persons. In fact, these techniques have been taught to many physicians and prosthetists in other countries and these techniques are now utilized throughout the free world. The VA Prosthetics Program improved the delivery of prosthetic services on a world wide basis.

In the period from 1963 to 1973, the Prosthetics Research Program continued to achieve major milestones in developing new prostheses and improved clinical techniques. Mauch Laboratories, under VA funding, introduced the swing-and-stance (S-N-S) hydraulic control knee, the most sophisticated multifunction knee mechanism commercially available. These more complex knee mechanisms were needed by the younger, more physically active veteran amputees.

The Prosthetics Research Study, Seattle, Washington, introduced and refined the new European amputation technique of Immediate Postsurgical Prosthetic Fitting (IPPF). This technique applies a rigid dressing over the amputated limb in the operating room. A temporary prosthesis is attached to the rigid dressing, and within a few days the patient ambulates with partial weight bearing. The rigid dressing is changed at selected intervals to ensure proper wound healing. The rigid dressing, in addition to providing the weight bearing "socket," also provides compression to reduce postsurgical edema and promotes wound healing. When properly applied, this surgical technique reduces the hospital stay and speeds rehabilitation.

Other advances in this time period (1963-1973) were the University of California-Berkeley four-bar linkage knee and the University of California-Berkeley polycentric rotation knee, which offers more natural knee motion for above knee amputees. Northwestern University initiated studies on externally powered upper limb prosthesis in 1963. These studies culminated in the development of a myoelectric controlled upper limb known as the VA-Northwestern University (VANU) system. Myolectric control allows the amputee to control the artificial arm by moving (or activating) the same muscles that had controlled the real arm. The muscle activation signal is detected by a pair of skin electrodes; the signal is electronically amplified and controls the small motors in the artificial arm. This system is now commercially available. University of California/Los Angeles also contributed in improving the control theory for myoelectrically controlled upper limb prosthesis.

The Committee on Prosthetics Research and Development (NAS-NRC) developed a long-range plan for rehabilitation research in 1971. This plan was issued in the form of a report entitled, "Rehabilitation Engineering—A Plan for Continued Progress." This plan formed a guide for future prosthetics research in the VA.

An overview of the period from 1973 to 1980

In 1973, the VA completed a major reorganization that resulted in a restructuring of the total prosthetics program. Prior to 1973, the Prosthetics and Sensory Aids

Service (DM&S) provided for clinical prostnetic service delivery with its Clinical Division. The Research and Development Division managed the R&D contract program under guidance of the Committee on Prosthetics Research and Development. The Education and Training Division managed the continuing prosthetics education program under guidance of the Committee on Prosthetics-Orthotic Education.

As a result of the reorganization, the Research and Development Division was transferred to the Assistant Chief Medical Director (ACMD) for Research and Development; the Education and Training Division was transferred to the Assistant Chief Medical Director for Academic Affairs; and the Clinical Division remained with the Assistant Chief Medical Director for Professional Services.

In 1975, the Assistant Chief Medical Director for Research and Development changed the name of the Prosthetic Research Program to more accurately reflect the broader scope of the program. The program was retitled to the Rehabilitative Engineering Research and Development (RER&D) Service. The mission of the RER&D Service is to improve the quality of life and allow more functionally independent activities of daily living by disabled veterans through research, development and evaluation of new or unique devices, techniques and concepts in rehabilitation.

The VA and the Rehabilitation Services Administration (DHEW) began to cooperate on a direct interagency basis following the dissolution of the Committee on Prosthetics Research and Development by the NAS–NRC. The VA and Rehabilitation Services Administra;tion (DHEW) sponsored a series of seminars or workshops in the major areas of rehabilitation. The final workshop, the thirteenth in the series, was held in April 1977; it was entitled, "Limb Prosthetics and Orthotics." The report from this workshop presented an overview of the current status of prosthetics research and development. The recommendations of the thirteen workshops were summarized into a new R&D plan for rehabilitation engineering, or prosthetics research as it was formerly known. This report was jointly released by the VA and Rehabilitation Services Administration (DHEW) in May 1978. This report was entitled, "Rehabilitation Engineering—A Plan for Continued Progress—II." These reports also served as a guide to future prosthetics research.

The devices developed in the R&D program in the period (1973–1980) tended to be more sophisticated refinements of existing devices. Some of the more important accomplishments in this area were: The Mauch "Swing-and-Stance" (S–N–S) knee became commercially available and training courses were conducted; light-weight polypropylene artificial legs for elderly amputees were introduced; the University of California-Berkeley improved 4-bar knee entered final clinical evaluation; the Mauch Hydraulic Ankle entered final clinical evaluation; and the University of California-Berkeley six-bar knee mechanism for knee disarticulation amputees was developed.

Although not the primary emphasis of this report, the orthotics field was achieving similar success during this period with the introduction of light-weight, and more cosmetically acceptable, orthoses. An orthosis is an orthopedic appliance or apparatus used to support, align, prevent, or correct deformities or to improve the function of movable parts of the body. The plastic devices replaced the traditional "iron works" and metal bending blacksmith shop aura surrounding earlier orthotic fittings. Many of these advances were natural consequences of the prosthetics program and the training in these new techniques were included in VA supported university programs.

In 1976, following the dissolution of the Committee on Prosthetics Research and Development (NAS–NRC), the RER&D Service initiated plans to bring the RER&D program into the local VA Medical Centers. That is, the expertise that had developed under Committee on Prosthetics Research and Development (NAS–NRC) guidance was not located in VA facilities where it could be of primary benefit to VA patients. The plan was, and still is, to stimulate VA physicians primarily responsible for the rehabilitation of the veteran to conduct research, development and evaluation on devices, techniques and concepts in rehabilitation. Under this plan, the expertise would now reside with VA physicians, prosthetics and the other medical professionals in the VA Medical Center (VAMC). The VA patient benefits directly from this expertise and, in addition, receives the most recent prosthetic developments being clinically evaluated in VAMCs.

To support the plan to bring the RER&D program into an intramural setting, the number of contracts with organizations not cooperating with a VAMC were reduced. This was accomplished by phasing out independent contracts as studies were completed. Those facilities that developed a cooperative project with a VAMC were encouraged to resubmit the project through VA's Merit Review process for recommendations on continuation.

To further strengthen the intramural program, a plan to create RER&D Centers was initiated in 1976. The first RER&D Center was established at the VAMC Hines, IL in 1978; the second Center was established at the VAMC Palo Alto, CA in 1979. The RER&D Centers provides the VA with unique regional resources. The RER&D Centers are affiliated with nearby engineering schools, just as the VA Medical Center is affiliated with a nearby medical school. The Center at the VAMC, Palo Alto, CA, is affiliated with Stanford University, School of Engineering. The Center at the VAMC, Hines, IL, is affiliated with the Illinois Institute of Technology, Chicago University and the University of Illinois.

An RER&D Center becomes the common meeting ground for VA physicians, VA rehabilitation engineers, medical school faculty and engineering school faculty (and graduate students). In this multidisciplinary environment, these professionals study the rehabilitation needs of the VA patient. An RER&D Center has a staff of approximately 30 employees that includes engineers, scientists and technicians. The RER&D Center staff provides the R&D support to VA physicians studying the problems of the disabled veteran. The typical project at the RER&D Centers addresses the broad range of rehabilitation problems in three primary areas: prosthetics, spinal cord injury and sensory aids.

The Immediate Postsurgical Prosthetic Fitting (IPPF) technique of amputee management was introduced in this country in 1964. Cost-effectiveness and patient benefit studies have demonstrated the significant advantages of this method in the clinical practice of amputation. The Immediate Postsurgical Prosthetic Fitting method has been presented in professional meetings of orthopedic, vascular and general surgeons several times over the past ten years. There have been at least 8 special continuing medical education course on this subject.

One of the most significant effects of the RER&D program on the clinical delivery of prosthetic services is the change in amputation surgical procedures. The majority of the amputations in the VA are the result of peripheral vascular disease. Prior to 1964, most of these amputations were above the knee. As the Immediate Postsurgical Prosthetic Fitting procedure was developed, the ability to retain the knee was improved (i.e., a below knee amputation). To complement the improved surgical techniques, improved diagnostic techniques were developed. The earlier diagnostic techniques were invasive, and difficult for the patient with peripheral vascular disease. As discussed earlier, new non-invasive diagnostic techniques were developed. These new techniques include magnetic blood flow measurements, laser Doppler blood flow measurements and transcutaneous oxygen monitors. These devices allow the surgeon, whether orthopedic or cardiovascular, to determine that most distal amputation site, by measuring the peripheral blood flow.

The current program in 1981-1982

The RER&D Service continues to take the lead in providing new or unique divices, techniques and concepts in rehabilitation of the veteran. The RER&D service continues to sponsor a wide range of R&D projects to fulfill the important rehabilitation needs of the disabled veteran. The projects supported by the RER&D Service can be divided into five rehabilitation areas: prosthetics/amputation; spinal cord injury; sensory aids; maxillofacial restoration; and RER&D Centers. The 33 projects in the prosthetics/amputation area focus on diagnostic techniques; surgical techniques; internal joints/prostheses; gait analysis; and prosthetics. The cost of supporting these projects was $2,798,186, which represents about one-third of the RER&D budget.

The RER&D Service submits all of the RER&D proposals it receives to peer review to assess scientific excellence, or merit. As with all research and development studies, if the project involves the use of VA patients, the project must have the approval of the Human Studies Committee within the VAMC, to assure patient protection. The RER&D program has received sufficient funding over the past five years to support all of the R&D proposals that are recommended as meritorious. In this manner, the projects supported by the RER&D Service are relevant to VA patient needs, have been judged to be scientifically sound, and have a significant probability of success of being accepted and used by veterans.

The RER&D program represents a significant effort in technology transfer. That is, this program transfers advanced technology from other scientific areas into practical applications in rehabilitation. New developments are underway in such devices as: reading machines for the blind that literally read the printed word with a computer generated voice; automated devices for deaf adults that remove the ambiguity in lip reading and improve comprehension; computer-aided manipulative devices to assist the quadriplegic in independent daily living; new concepts in wheelchairs; and, a new generation of prosthetic devices.

The current studies in prosthetics/amputation R&D includes the following highlights: a joint project with NASA and the Jet Propulsion Laboratory at California

Institute of Technology to adapt a deep space probe multispectral imaging technique to non-invasively "probe" the body to determine peripheral circulation in the patient with vascular disease as an adjunct to determining the need for or level of amputation; the Boeing foot developed by Boeing Technology Service and the Prosthetic Research Study in Seattle, Washington, that utilizes a heel-to-toe leaf spring to replace the solid metal keel in a SACH foot, thus providing toe lift; the final clinical evaluation of the University of California-Berkeley improved four-bar knee at the VAMC San Francisco; and the clinical assessment of improved diagnostic techniques at the VAMC in Seattle, San Francisco, Tucson, and Castle Point, N.Y.

The number of intramural projects had increased from 20 in 1977 to 86 in 1981. The number of VAMCs conducting RER&D studies has increased from 17 in 1977 to 36 in 1981. These data confirm the success of the plan to stimulate VA physicians to conduct RER&D studies that, in turn, provides improved care to more VA patients on a direct basis.

In April 1981, 36 proposals were submitted to RER&D for Merit Review, and funding, if so recommended. One half of these proposals (or 18) were from VA physicians who had not previously submitted to this program; 10 of these new projects were approved for funding by RER&D Service in FY 82. Five of the ten new projects are in the prosthetics/amputation area. In response to the October 1981 submission deadline, the RER&D Service received 30 proposals for Merit Review. There were 23 new proposals in this group; 14 are in the prosthetics/amputation area. The intramural program continues to stimulate VA physicians to study the recurring needs of the disabled veteran encountered in the delivery of clinical prosthetic services. As the physician develops new devices, techniques or concepts in rehabilitation, the VA RER&D program aims to facilitate technology transfer within the professional community to help meet the needs of the VA patient and improve VA health care delivery.

PREPARED STATEMENT OF JOHN MCLAUGHLIN, VIETNAM VETERAN AMPUTEE

Mr. Chairman, I want to thank you and also my Congressman, Bob Edgar, and Congressman Dunn for the privilege of allowing me to appear before the Subcommittee to present my experience with the prostheses that the Veterans Administration have provided for me.

My name is John McLaughlin. I lost my leg in Vietnam while I was with the 101st. Airborne Division. I was hit by a satchel charge on June 14, 1969 when our camp was overrun by enemy soldiers.

During the past twelve years I have received about six legs from the V.A. None of these legs has fit satisfactorily. In fact for the most part they have fit so poorly that I constantly had to endure pain and pressure sores. My job as a diesel mechanic requires me to be on my feet all of the time and this has made the problems with my leg much worse.

I had my first leg made in early 1970 by a shop in New Jersey about one hour drive from my home. I didn't know much about any of the shops approved by the V.A. but I chose this one because it was run by an amputee. I figured he would have a better understanding of the problems of amputees. I had a new leg made about every two or three years after the first one. In each case the pattern was the same. I would wear the leg for a while and then begin to develop very painful pressure sores.

I have to admit that I would put up with the pain for long periods of time before I attempted to have adjustments made by the shop. But very frankly I had a family to support and couldn't afford to miss work to make the long drive for adjustments. I also found that the modifications and new legs did no good. I still experienced severe pressure sores and extreme discomfort. I just decided to put up with the problem and not complain.

In January, 1979 my leg got so bad I went to my private family surgeon. He cut the sores open and healed them from the inside out. This help for a while. In the time that I had visited V.A. doctors with similar problems they had never suggested doing this or even provide me with medicine to try and clear up the sores.

Also in 1979 I was authorized a new leg. Tired from the poor results from the previous shops I went to a new shop. I was fitted for a new leg in February or March of 1979. I waited for the leg to be completed with no response. My wife and I attempted to find out the cause of the delay. The prosthetic shop claimed it had sent the leg to the V.A. The V.A. claimed they had never received it. As it turned out the leg was discovered unfinished in a corner of the prosthetic shop. It seems that one of the employees had quit in the middle of making the leg and no one in the shop bothered to find out what projects he was working on. It took me seven months before I received that leg.

I was fitted with my most recent leg in February, 1981. I have worn this leg only a half dozen times. It is too painful. The prosthetist claims that I must keep coming back for more adjustments but I have already been back three times so far and I am still unable to wear the leg. I can't afford to continually miss work and get the same poor results each time. I still have to wear my 1979 leg which is not much better.

The prostheses provided by the V.A. are not only inadequate but the V.A. doesn't seem to care enough to find another means of fitting me with a decent leg. The technology of this country can have a man walking on the moon, yet it can't fit some veteran like myself with a suitable leg to allow me to walk without causing sores and pain.

I hope that we are here today to convince the V.A. that they are behind the times as far as this matter is concerned. I thank you very much for allowing me to voice my feelings.

PREPARED STATEMENT OF KIRK BAUER, ATTORNEY, BOSTON, MASS. AND VIETNAM VETERAN AMPUTEE

Mr. Chairman, I want to thank you for the opportunity to speak before this subcommittee regarding the prosthetics program of the Veterans Administration. My name is Kirk Bauer and I am an attorney associated with the law firm of Everett Grant in Boston, Massachusetts. Recently I have been doing some consulting work for a member of your committee, Representative Jim Dunn. I am also Vice-President of the National Handicapped Sports and Recreation Association.

I served in Vietnam as a sergeant in a combat infantry platoon of the Ninth Division. I lost my leg above the knee from a hand grenade explosion on March 23, 1969 I subsequently spent 6 months in Letterman Army Hospital before being discharged.

During the period from 1969 until 1976 I received 5 artificial legs from the Veterans Administration contractors. Not until 1976 did I receive a leg that allowed me to carry on my activities in comfort and free from significant pain.

When I first authorized a new leg the V.A. clinician gave me a list of approved prosthetist shops in the San Francisco bay area. Being concerned with getting the best fit I inquired as to which were the best shops. The V.A. personnel could not give me this information. As a result, I was left to blindly pick a shop in my home town in Oakland, California. On visiting the shop I found it to be in a dingy building in a run down section of town. The owner was a certified prosthetist but as I later learned, he was busy running the business and had little to do with the actual construction of artificial prostheses. I also found that the assistants that did the actual work were not themselves certified and in fact many of them had but little training in prosthetics or in any related work.

I had 4 legs made at this facility over the next 2 or 3 years and none of them fit satisfactorily. Some were so ill fitting that circultion was cut off at times, excessive pressure sores would occur and chaffing would literally rub my skin raw at times. I attempted a number of adjustments in the socket but with no lasting results.

During visits to V.A. clinics I would question personnel about these problems. They usually suggested either new fitings or reminded me that as an amputee I would have to learn to live with some pain and discomfort. I, like many veteran friends, accepted this verdict and attempted to live with the problem. I was willing to put up with some pain but a good deal of the time I could only wear the leg for a few hours and then would literally rip it out in frustration. I can remember times the first 3 or 4 years when I would literally flush red and have to scream with pain. I did remain active during this time engaging in water skiing, snow skiing and even some backpacking. I did this despite the discomfort as I was determined not to let any artificial leg alter my lifestyle dramatically.

About 1973 or 1974 a fellow veteran amputee suggested a modification in my socket using a wool sock and strap. I asked V.A. physicians and prosthetists about the change. They discouraged it recommending still another new socket. Tired of the same approaches which had produced no results and at the urging of my friend I went against the advice of the expert and insisted on the change. This was the first time I had not followed their advice. Although the fit was still not satisfactory, there was a vast improvement in the comfort of the fit.

I learned two very important lessons from the little experience. I learned that if I really wanted to do something about my problem I would have to fight for it even from an agency which was supposed to be representing my interests. Before I had meekly accepted the advice of the V.A. I also began to realize that there seems to exist a certain inflexibility in the approach of those to whose care my disability was entrusted. They hesitated to experiment with a number of options which might have helped me.

In 1975 after moving to Boston I received authorization on my 5th leg. By then I had developed a network of amputee friends and was directed to a prosthetist who did quality work. I was warned to insist that he himself do the work. The turnover was so great in his shop that one could never be sure how proficient some of his craftsmen were. I did insist to the point that I threatened to walk out of the shop when he tried to refer me to an assistant. I had to wait over 3 months for that leg but it was worth it. The fit enabled me to wear my leg for 12-14 hours a day with no major discomfort. Six years after losing my leg I finally had a proper fit and realized for the first time that much of the pain and discomfort was necessary, I, like so many of my veteran friends had been silently suffering with the pain because we had come to believe as one friend put it "that was the price you had to pay for being for an amputee."

Since 1976 I have been satisfied with my socket fit but I have had a number of problems with breakage of various components. On one leg for example, I broke the foot unit about 8 times in the course of a year's wear. Once while working in the Norfolk County Courthouse, Cambridge, it broke. Spectators watched with their mouths open as my boss helped me across the courthouse with my foot doing 360 degree turns. It got to the point that I would have to carry an extra foot connector in a pack with me wherever I went. I had a number of problems with that leg and wrote the V.A. a long letter detailing some of the design and other problems with it. I don't know if anyone ever looked at the letter as I never received a response from the V.A. In my opinion, this is but another small example of the unresponsiveness which has turned so many veterans off to the V.A. services.

Presently, I have an ankle rotator which doesn't work. The rotator when it worked was a great help in taking the twisting pressure of a rigid ankle off of my stump. Again, friends recommended the device not the V.A. Unfortunately, the device had a design and material defect which would produce a loud noise. After spending $500 of the V.A.'s money in attempting to fix it I had it nailed rigid. Ironically, I was talking to another prosthetist who stopped using that device a couple of years ago because he detected the defect. I know that the V.A. has an evaluation program to test such devises. It all was such a waste that they were not able to detect this and more importantly to let the information out to the field.

I have met some sincere people working at the V.A. who are trying hard to serve the veteran. Unfortunately, for many the V.A. bureacracy too often seems a hostile, unresponsive entitly with no real concern for those they are mandated by law to serve. This has turned off a lot of my veteran amputee friends. The V.A. prosthetics program is no exception. I have found in my experiences that this program offers too little guidance and that the prosthetics shops which contract with the V.A. are terribly inconsistent and generally poor in quality craftsmanship. There is a lack of flexibility in the approach to solving the problems of many veteran amputees. The V.A. has failed to fulfill its mandate to serve the veteran amputee.

Prepared Statement of Averill M. Penseyres, R.N., P.H.N., Oceanside, Calif.

I would like to thank the members of your Committee on Veterans' Affairs for your concern for disabled veterans demonstrated here today by your attendance at this hearing.

Our son, James, lost his left leg below the knee while serving with the United States Marine Corps in Vietnam.

In the past 13 years he has had four government issued prostheses in his search for an artificial limb that would enable him to function more comfortably without continuous pressure point lesions.

Until last summer when we learned of the Institute of the Advancement of Prosthetics we believed the Veterans' Administration's counselors and certified prosthetists when they inferred that it was not possible to achieve more comfort and certainly not sufficient comfort to enable the pursuit of endurance sports. As one counselor stated to Jim regarding surfing, "Well you can't do that anymore."; Jim replied, "I am surfing." "Well, isn't that hard?" "Yes, Sir, everything is hard." I have some telephoto photos of Jim on his surf-board, taken 8, 10, and 18 months after he stepped on the mine. He mailed one of these back to the 'spare parts' department at Oak Knolls Naval Hospital in Oakland, California with the caption, 'Anything can be done.'.

Jim was very active in sports before he enlisted in the U.S.M.C. He was on his High School track team and he placed third in the national surfing competition at Huntington Beach, California three days before he reported to the induction center to serve his country. Like Super-Vet, Jerry Benson, Jim dreams of participating in endurance sports with comfort and with freedom from the frequent breakdown lesions with the ensuing painful, slow healing of his short, scarred stump.

Dr. Donald Curtis, Veterans' Administration Medical Director, stated in his reply to my letter last year that most professionals in the field of Prosthetics do not believe that the Stokosa multiple test socket technique is necessary, hence, Government Agencies and private insurance companies have been reluctant to incur this increased cost. I wonder if the four prostheses Jim has had in the past 13 years has been less expensive?

Although we are not wealthy people we will underwrite the expense of a Stokosa prosthesis, expense that is morally the debt of this nation for any veteran who has honorably served our nation in any war.

Gentlemen, I believe that you share with President Reagan's statement recently, "At a time when we are striving to restore the economic stability that is essential to the overall strength of this nation, we cannot lose sight of the nation's debt to those brave veterans who have sacrificed their life and limb for the defense of their country."

I also believe that you share with me the conviction that our veterans have earned the best of care and the very best of artificial limbs available and that this care should be available in every state in these United States.

We can pool and share knowledge; we can support and fund continuing research without the fragmentation that is prevalent now. We can speed the training of qualified prosthetists so waiting lists of years will disappear. I believe that you can make these men's dreams reality.

PREPARED STATEMENT OF JAN J. STOKOSA, CERTIFIED PROSTHETIST, LANSING, MICH.

This testimony is presented to the U.S. House of Representatives Committee on Veterans' Affairs—Sub-Committee on Hospitals and Health Care, as requested by Ronald M. Mottl, Chairman.

I an Jan Stokosa, a Certified Prosthetist (Certified by the American Board for Certification in Prosthetics and Orthotics), a VA Qualified Prosthetist (VAQP-654), and Director of the nonprofit Institute for the Advancement of Prosthetics in Lansing, Michigan.

In this presentation I will describe my personal experience with the Veterans' Administration (VA), describe the procedures followed when a veteran amputee is fitted with a prosthesis, the associated fitting problems, and then suggest solutions.

My personal experience with the Veteran's Administration Prosthetics Clinical Service covers 12 years. My father's experience before me was 22 years. I have worked with many VA Hospitals and have provided prosthetic treatment and care to many amputee veterans of World War I, World War II, the Korean War, and the Vietnam War.

An amputee is a person that has had all of or a portion of a limb removed. A prosthetist is a person who replaces the amputated part with an artificial limb or prosthesis. The amputation is permanent and the amputee must forever rely on an artificial replacement for balance, mobility, function, and body image.

The amputee clinic at the VA Hospital is the beginning and end of prosthetic treatment and care for veteran amputees. The veteran goes to the clinic and gets a prescription for the prosthesis. The type prescribed is one that is listed in the VA "artificial limb contract".[1] The veteran then takes the prescription to a prosthetist who is under contract to the VA. VA regulations[2] stipulate that: (1) all definitive prostheses will be provided by prosthetists, from the public sector, contracted with the VA, (2) veterans may not receive prosthetic treatment from a non-contracted prosthetist.

The VA Artificial Limb Contract is structured to pay for a prosthesis defined by a specific level of amputation, i.e.: one price for a below-knee amputation prosthesis, and one price for an above-knee amputation prosthesis, etc. Care is not individualized for specific patient needs in terms of fitting techniques and componentry selection. I believe optimum care must be individualized. This standardized VA policy perpetuates (and to some degree created) an assembly line mentality in prosthetics. The prosthetist is required to follow the prescription re: fitting techniques and component selection. The VA contract does not allow use of more advanced fitting methods for individual patient needs. Consequently, a high percentage of veteran amputees needlessly endure pain and immobility.

The prosthetic fitting process begins with:

1. A negative impression cast of the person's amputation stump.
2. A plaster positive mold is then made from the hollow cast.

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[1] Artificial Limbs Contract, VA Marketing Division for Medical Supplies and Equipment.

[2] Retained in committee files.

3. The positive mold is rectified to establish the desired fit. Rectification involves removing plaster from areas on the mold corresponding to the areas of the amputation stump that are able to accept weight bearing pressures, such as areas of large muscle mass. Plaster is added to the mold in places corresponding to areas of the amputation stump that are sensitive to pressure, such as sharp boney ridges like the shin bone, and sensitive scars. Allowances are made to assure that blood circulation is not restricted and that nerves are not irritated. Completed, this master mold will be used to fabricate the "socket" of the prosthesis. The socket fits onto and supports the amputation stump. The socket becomes the intimate link between the living stump and the artificial limb. Properly fitted, the socket provides support, mobility, improved circulation and comfort. Improperly fitted, the socket can be a constant source of pain and frustration. Proper fit has yet to be defined quantitatively. The failure or success of the fitting necessarily depends on the prosthetist's practical and experiential knowledge and also upon more abstract abilities such as artistic skill and innovativeness.

4. If a soft lining material is to be used, it is now formed over and around the plaster mold.

5. The plastic socket shell is formed over the soft lining.

6. The plastic socket is attached to an artificial foot. A temporary adjustable alignment device is positioned between the foot and the socket to enable proper positioning of the foot during walking sessions.

7. The amputee dons the prosthesis and walking begins. At this point, the prosthetist can only hope that he guessed correctly about how the person's amputation stump would react to and accept the pressures of walking and weight bearing. If there are problems of pressure and pain, there are three basic approaches, (1) removing material from the socket or liner to relieve painful pressure. Sometimes material must be added for padding or support, (2) if the problems are too severe or if the attempts to correct the problem fail, the prosthetist can start over, (3) the third option would be to ignore the problem, hope it will go away, or tell the patient that it will get better with time and some pain is to be expected anyway.

A study titled, "Prostheses, Pain and Sequelae of Amputation, as Seen by the Amputee,"[3] draws a startling conclusion regarding comfort. It appears that many amputees were prepared to accept an uncomfortable fit as "a part of the game." However, according to a recent report by the United States General Accounting Office,[4] pain and other problems associated with the use of artificial limbs are critical issues among amputees and those who serve them.

Approximately 5,000 dissatisfied amputees have requested treatment at the IAP. Many are veterans. Pain and immobility are the major causes for their dissatisfaction. Regarding pain, mobility, and patient satisfaction, I believe no single factor is more important in lower-limb prosthetics than the relationship between the amputation stump and the socket.

A valuable diagnostic fitting process presently exists that enables a more precise socket fit and increased comfort.

This process involves forming a clear plastic "test" socket over the previously described rectified positive mold. This clear test socket can be fitted to the amputee permitting the prosthetist to see and correct the inaccuracies of fit. However, the VA refuses to pay prosthetic contractors for using test sockets while fitting veteran amputees.

But, there is widespread contradiction, within the VA, concerning this issue. We have on one hand VA prosthetic experts extolling the benefits of this process as "a relatively inexpensive and expeditious means for a direct visual assessment of the total contact fit of the socket . . . because direct observation of the residual limb-socket interface under static and dynamic conditions is possible, some of the obstacles to optimum fit and training, such as residual limb pain and skin breakdown, are substantially reduced."[5] On the other hand, a letter written in 1978[6] by Theodore Meyer, Acting Chief, Prosthetic and Sensory Aids Service, Veteran's Administration, states that the VA does not authorize check sockets. I understand that this remains current practice.

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[3] Chadderton, H.C. "Prostheses, Pain and Sequelae of Amputation, as Seen by the Amputee." Prosthetics and Orthotics International, II: 1, pp. 12-14, April, 1978.

[4] Ahart, Gregory J., "Issues Involved in Amputees Use of Artificial Limbs (HRD-81-144)." United States General Accounting Office B-204389, Sept. 22, 1981.

[5] Staros, Anthony and Goralnik, B., "Lower Limb Prosthetic Systems." Atlas of Limb Prosthetics, Surgical and Prosthetic Principles. C.V. Mosby Company, St. Louis, p. 180, 1981.

[6] Appendix A.

Ironically, in 1960 the VA published results of their own research experiments on "transparent" plastic check sockets,[7] and concluded that a clear plastic socket has the advantage of permitting observation of tissue distortion or compression and of changes in blood supply to the stump while in the socket. It is thus possible to define areas of greatest pressure and to observe the effects of changes of alignment between the socket and the remainder of the prosthesis.

In the private sector there has been further development of transparent test sockets.[8][9][10][11]

What more is needed to get the VA to approve this process?

According to VA procedures, once a satisfactory fit is achieved, the socket is coupled to components predetermined and prescribed by the amputee's clinical team chief and the prosthesis is finished.

VA procedures do not permit changes in components without a great deal of time consuming red tape. Yet, at the IAP, we have found that during walking trials, patient-prosthetist interaction in the component selection process can vastly improve patient satisfaction and use of the prosthesis. Current VA practice does not permit payment for time used in component selection and walking trials.

Unfortunately, the fit of a prosthesis is not static or permanent. Muscles atrophy and shrink; tissue fluid volume also changes the size and shape of the stump. Consequently, the socket's fit must constantly be altered by adding or removing material to change the distribution of pressure. This process continues until the fit can no longer be maintained satisfactorily. The veteran amputee returns to the VA Hospital Amputee Clinic to begin the process over again.

The VA itself has recognized that there is a problem with the quality of care given veteran amputees. In 1976, the VA requested the Committee on Prosthetics Research in the Veteran's Administration to conduct an extensive review of research, development, and evaluations of VA prosthetics programs. The results were unanimously negative.[12]

"It cannot be stated too strongly that in the field of prosthetics, the United States has lost its world leadership."

The Committee also drew the following conclusions: the Committee was disappointed with the overall accomplishments in prosthetic research in the VA. It found limited imagination, poor coordination between intramural and extramural efforts, insufficient quality control of products, and little evidence of long-range planning or overall understanding of problems in relation to social or vocational needs. Those responsible for this program have failed to understand the complexity of rehabilitation and the subtly of factors involved in its solution. There has been little thought beyond the ordinary of a true national need for effective prosthetics.

Another example of the VA's recognition of problems in prosthetics is taken from the "Bulletin of Prosthetics Research", Spring, 1977. Kegel et.al. say: "The state of the art has improved considerably over the years, but there is still a definite need for more innovations, and for concern about patient comfort. While a greater number of amputees appear to be receiving prostheses more rapidly than in the past, there are still many uncomfortable and dissatisfied patients."

I personally have treated scores of veteran amputees and know the medical and financial problems they face. Bureaucratic structure in the Veteran's Administration prevents corrective action. I was personally barred from practicing in a Veteran's Administration Hospital (due to my outspoken views) but subsequently was exonerated by the VA's own investigation of the matter. (Appendix A) To this day I am still barred from that hospital. The Veteran's Administration has ignored the findings of their own investigation.

There are many accounts of veterans who have attempted to penetrate the veil of bureaucratic red tape in order to get approval for prosthesis fitting using the test socket process. To my knowledge, all have failed. I have included in the attached Appendix, copies of veteran's letters, and copies of letters from the VA to this effect. I want to share three interesting stories with you:

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[7] Anderson, M.H., Bray, J.J., and Hennessy, C. "The Construction and Fitting of Lower-Extremity Prostheses." Orthopaedic Appliances Atlas—Artificial Limbs, Vol. II, pp. 276–277. J.W. Edwards, Ann Arbor, 1960.

[8] Mooney, Vert, and Roy Snelson, Fabrication and Application of Transparent Polycarbonate Sockets, Orthotics and Prosthetics, 26:1:1–13, March, 1972.

[9] Monney, Vert, and Roy Snelson, Feasibility Study of the use of Transparent Sockets and Modular Prostheses in Clinical Parctice. Final Report on Project No. 23-P-5529019 to Social and Rehabilitation Service, Department of Health, Education, and Welfare, May, 1973.

[10] Senlson, Roy, Use of Transparent Sockets in Limb Prosthetics, Orthotics and Prosthetics, 27:3: September, 1973.

[11] Hammontree, S. and Snelson, R., "The Use of Check Sockets in Lower-Limb Prosthetics." Selected Reading—A Review of Orthotics and Prosthetics, pp. 83–86. The American Orthotic and Prosthetic Association, Washington, D.C., 1980.

[12] "Final Report of the Committee on Prosthetics Research in the Veteran's Administration." Assembly of Life Sciences, National Research Council, National Academy of Sciences. Washington, D.C., 1976.

1. A service connected World War II veteran amputee attended a VA clinic in 1981, was evaluated and told he needed a new prosthesis. He asked to be treated at the IAP using the test socket method, however, the VA would not allow it. Instead they prescribed a wood-type prosthesis (similar to one he had worn for 30 years). The prosthesis was built by a VA contracted prosthetist, but it was a total failure—causing pain, sores, and great discomfort. He was fortunate enough to have the personal financial resources to pay for a prosthesis, was seen at the IAP and fitted using the test socket process. It was the first time he had been fit using test sockets and he is extremely impressed with the comfort of his prosthesis. (Appendix B)
2. A service connected Vietnam veteran amputee who was similarily refused had never been fit using test sockets and always had problems with pain and sores that affected his job. He is fortunate to have a good medical insurance policy where he works. The insurance paid for his prosthetic treatment at IAP, including test sockets. He has not had a problem with sores for two years. (Appendix B)
3. A service connected Vietnam veteran amputee was refused approval because the cost exceeded the VA limit. The veteran requested the VA to pay the maximum for that particular level of amputation, and he would pay the difference. This was also refused. He now admits that he will have to wait until he can find the necessary funds. His final comment is, "It is very discouraging to think that what I feel would be a great improvement to what I have is out of reach at this time." (Appendix B)

Hundreds of veterans throughout the country have written congressman and senators requesting personal assistance with their prosthetic problems. None to my knowledge have been successful. In 1977 a service connected veteran from the Korean War wrote to his congressman from Michigan (Rep. Bob Carr), requesting personal assistance and investigation into this matter. However, nothing happened! The veteran's final comment is poignant, "I have lost a leg for my country—I can accept this. I have lost my prosthetist to bureaucratic red tape—I don't have to accept this." (Appendix B)

At this time, I would like to direct my text toward another major problem—The shortage of qualified prosthetists. The latest manpower study of the prosthetic profession was published in 1976, the "Status of Manpower Report": "There is a dire shortage of qualifed orthotists and prosthetists in the United States. This statement has general, possibly even universal acceptance in the field and by those individuals and organizations related to orthotics and prosthetics. Previous surveys and papers presented by others have substantiated this fact."

The 1976 conclusions were reaffirmed in 1980 by Sam Hammontree, C.P.,[13] the author of the earlier report in a "Letter to the Editor", The American Orthotic and Prosthetic Association Journal, Almanac, June 1980, he wrote: ". . . The hard raw fact is that we need more prosthetists and orthotists coming into this field than we can possibly get through the educational programs that exist today."

Prosthetist education and training is another issue. In the May 1980, Almanac, Gunther Gehl, C.P. Director of Prosthetic Education at Northwestern University Medical School in Illinois, points out: "There is no other paramedical profession where on can sit for certification with only nine weeks of special schooling."

The total requirement in the United States for certification as a prosthetist, is a two year Associates Degree (in any subject), 9-18 weeks of specialized schooling, and between one and four years of practical experience. Consider this in light of the demands of the prosthetic profession, a highly complex interface between the field of medicine, engineering, physics, and biomechanics.

Gunther Gehl, C.P. , again in the May, Almanac, comments upon the practical experience component of the certification requirement: "It sounds good on paper to have one, two, or four years of experience? There are no uniform rules on what the candidate has to accomplish within that time period."

Mr. Gehl concludes: "What we create is a clinician who can tell you what is wrong, but does not know how to correct the fitting problem."

The end result is a generally poor level of patient care throughout the prosthetic profession.

Better education and training for prosthetic certification is needed. The VA isn't helping achieve this goal. Their criteria for accepting prosthetists is vague and inconsistent. Rather than contributing to the problem, the VA should be leading the fight for better, more consistant, and more objective criteria.

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[13] Hammontree, S.E.: Status of Manpower. American Board of Certification in Orthotics and Prosthetics, The American Orthotic and Prosthetic Association, The American Academy of Orthotists and Prosthetists: A Conference on Educational, Certification, and Manpower Requirements in The Orthotics—Prosthetics Profession in the U.S., Ponte Vedra, Florida, Feb. 15-19, 1976.

Advancements in training and education of surgeons is also indicated. The degree to which surgeons understand and use new surgical and prosthetic developments will directly determine the benefits received by amputees.

For example, a 1973 study,[14] shows that below-knee amputees can bear more weight and have fewer fitting problems if their surgery includes the Ertl osteoplasty—the establishment of a weight bearing bone bridge at the end of the stump. This Ertl procedure is several decades old, but its theraputic value is still not accepted by the medical and prosthetic community, despite verification of its benefits at Valley Forge General Hospital.

In summation, I would like to thank the members of this Committee for the opportunity to speak here today. I know Congressman Dunn personally and am deeply convinced of his sincerity. I have no reason to question the sincerity of the other members of this Committee, and am gratified by the effort they have put forth to bring this hearing about. Yet there is something I must say before closing:

This is not the first time the Veteran's Administration has been investigated. I call your attention to the previously mentioned investigation of the VA conducted in 1976 by the Committee on Prosthetic Research in the VA. The findings were almost unanimously negative. Yet what has changed? Is the veteran receiving better care and support from the VA today than he was before this report? I believe the answer is no.

The list of investigations of the VA that have resulted in only paper and words could go on and on. But let me go directly to my point:

The Institute for the Advancement of Prosthethics, under my personal direction, has a waiting list of over 5,000 persons seeking quality prosthetic care, many of them are veterans. They await the outcome of this hearing with great anticipation. They, along with numerous others look to myself and the IAP for leadership in upgrading the field of prosthetics and the individual care available to each of them. I will not let these people down.

I will watch with great hope for improved care for the veteran amputee which should come from this hearing. I will report that improvement with great joy the moment it is discernable. But likewise I will not hesitate to report to these people that this was just another VA hearing, with no tangible outcomes other than paper and words. Again, I respectfully thank you for the opportunity to speak.

APPENDIX A

VETERANS ADMINISTRATION HOSPITAL,
Allen Park, Mich., September 19, 1978.

INSTITUTE FOR THE ADVANCEMENT OF PROSTHETICS,
Lansing, Mich.

DEAR MR. STOKOSA: We received your quote for a check socket on Mr. William Stieler.

Mr. Bert Goralnik of Central Office states the Veterans Administration does not authorize check sockets.

Sincerely,

THEODORE MEYER,
Acting Chief, Prosthetic and Sensory Aids Service.

VETERANS ADMINISTRATION HOSPITAL,
Ann Arbor, Mich., July 3, 1975.

MR. JAN J. STOKOSA, C.P.,
Prosthetics Services,
Lansing, Mich.

DEAR MR. STOKOSA: This letter will serve as notice that as a result of your conduct June 5, 1975, your attendance at our Clinic is no longer acceptable. A review of the entire situation leaves us with no alternative but to terminate your services for this hospital.

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[14] Newsletter . . . Amputee Clinics, Vol. 2, No. 4, pp. 2-4, July, 1973.

Any further discussion concerning the matter will be referred to the VA Marketing Center, Hines, Illinois.

Very truly yours,

JOHN M. FIELD,
Chief, Supply Service.

VETERANS ADMINISTRATION,
PROSTHETICS CENTER,
New York, N.Y., March 25, 1976.

DIRECTOR, VA HOSPITAL,
Ann Arbor, Mich.
Allen Park, Mich.

REPORT OF VISIT OF MARCH 11-12, 1976

1. This report of visit is being sent directly to your hospitals without any official channeling through Central Office since we came at your invitation. A copy of this report, however, has been sent to 112C2 in Central Office for its information.

2. Mr. Henry Gardner, Consultant and Mr. Gary Fields of my staff join me in thanking you and your staffs and those associated with Dr. M. Claudette Konzen's clinic at Ann Arbor and Dr. Pendy and Mr. Currie's clinic at Allen Park for the courtesies shown during our visits Thursday and Friday, March 11-12, 1976. As you may recall we visited with interest primarily focused on the high frequecy of use of gel sockets for below-knee amputee prostheses at the VA Hospital, Ann Arbor. We were also asked by Mr. Jan Stokosa of Prosthetic Services of Lansing, Michigan to look into a problem concerning the services he provided to your facilities.

3. We were impressed with Dr. Konzen and the manner in which she operates the Amputee Clinic. She appeared to have a good rapport with the patients. Nevertheless we concluded from this one-time observation that more "team" participation might be encouraged. We were also impressed with the quality of the prosthetic fitting in that part of Michigan. Indeed the work of all the prosthetic laboratories observed was found to be excellent. And this observation includes the work of Prosthetic Services of Lansing which we felt, in the one case observed, was perhaps of the highest quality we have observed anywhere. Thus, although this was a limited observation, any statement that his workmanship has deteriorated cannot be supported. We do question the soundness of the Ann Arbor clinic's procedure for having amputees presented at the clinic on adjustable legs. The prosthetist should be depended on for alignment if he doesn't do this well he must redo the limb at his own expense.

4. During our visit to the University of Michigan's Department of Physical Medicine we learned more about the gel socket and its usefulness for below-knee amputees. We believe now that there has been a weakness in the dissemination of information about the gel socket. Indeed, this may be the reason that we experience no other great demand for gel sockets in the VA system. Therefore we asked Mr. J. Cockrell of the University of Michigan to prepare a draft manual which we could review and to which we could provide editorial contributions for eventual publication. We have also asked Mr. Joseph Giacinto of the University of Michigan, Prosthetics and Orthotics Department to spend several days in New York at our Center to train some of our prosthetists in the fabrication of the gel socket. We will be able to do this before June 1976. While Mr. Giacinto is here we will also make a video tape on the fabrication procedure. We expect that as a result of his visit our prosthetists will become sufficiently familiar with the technique to perform fittings here for evaluation purposes. We will also use the video tape not only to check the draft manual but to constitute a part of a package for others in the United States who may want to teach or use the gel socket. To obtain additional evaluation data, our staff here also will be contacting the several prosthetists throughout the country who have been trained by the University of Michigan in the fabrication and fitting of the gel socket.

5. Depending on the results of these evaluations, we would then consider the gel socket liner for inclusion in the Veterans Administration Decentralized Schedule, Artificial Limbs. Until we have that experience and until the information on the fabrication of this liner has been promulgated we cannot recommend its inclusion. The same conclusion is respectfully offered about the rubber sleeve suspension which, despite its apparent simple effectiveness, may create dermatological problems particularly in warmer climates.

6. We were impressed with the very successful fittings at Ann Arbor. However, we still do not look on the gel liner or rubber sleeve as panaceas. Despite the weight

increment resulting and the problems associated with perspiration absorption and perhaps fit durability, the gel socket apparently has a role in prosthetic fitting; we wish to define that role during the evaluation process. At the present time, we believe that its only use is for problem stumps per the air cushion socket, but the evaluation results will clarify the matter.

7. During our visit to Allen Park, Mr. Currie suggested that the VA Prosthetics Center centralize at its own facility the national program of training prosthetic representatives. Mr. Currie who had a number of suggestions also provided copies of his curriculum used for on-the-job training program at VAH Allen Park. We thought Mr. Currie's suggestion an excellent one and will consider it.

8. In discussions with the Allen Park Director, Mr. Zamberlan, we noted to him our increasing interests at the University of Michigan and the Rehabilitation Institute of Detroit in development programs directed at improving licensed vehicles for handicapped drivers. We thought it appropriate therefore for the VA Hospital Allen Park with its driver training program to become involved in the VAPC van evaluation. This was suggested to Mr. Zamberlan who heartily agreed as did members of his staff. Steps are now being taken to initiate the participation of the VAH Allen Park in the van evaluation.

9. We met with Mr. Jan Stokosa at the VAH, Allen Park on Friday, March 12, 1976. Mr. Stokosa told us about his past participation in the clinic team at Ann Arbor and about the problem which arose last summer affecting the professional relationship between him and the Chief of the Amputee Clinic Team at VAH Ann Arbor.

10. We were favorably impressed with Mr. Stokosa during this meeting. He was very calm, deliberate, and objective; he demonstrated a desire to be agreeable as noted by Ms. Woods of Marketing in her letter of June 24, 1975. He expressed a sincere interest in being helpful to veteran patients; from what we could observe, especially the prosthetic fitting we saw at VAH Ann Arbor, he has demonstrated excellent workmanship and apparently some skills in dealing with patients since some do prefer to go to him for reasons other than geography. We nevertheless respect Dr. Konzen's wishes as a physician to determine the constitutency and the management procedures used in her clinic team. These wishes should be honored above all since she is responsible for the patient. Nevertheless, we think that there is a significant role that the prosthetist plays in providing services to the same patient; that role should not only be expressed in his own laboratory but should be encouraged at the clinic team meeting whenever a patient's prosthetic needs are being reviewed.

11. There should be no question raised about the contract held by Prosthetic Services of Lansing. We cannot now support any consideration for cancellation, especially since the VAH Allen Park thinks highly of his services. At the same time, we respect Dr. Konzen's wishes about the constituency of her team. But we urge that the convenience of amputee veterans be considered as primary and that Dr. Konzen receive a representative of Prosthetic Services of Lansing on her team. Prosthetic Services of Lansing will be chosen by some veteran amputees for services; these amputees must be allowed this choice since Prosthetic Services is a VA contractor and should continue to be one for the foreseeable future. If this facility is chosen by a patient, and the patient lives closer to Ann Arbor than Allen Park he should also be allowed, for his convenience, to be seen at the VAH Ann Arbor and at its amputee clinic. Moreover it would be unfair to a patient choosing Prosthetic Services of Lansing to be reviewed at VAH Ann Arbor by a clinic team without representation of the prosthetist of his choice. Therefore, for complete and convenient service to the patient, representation from the private practitioner who will provide that service is needed. In this respect we would also urge that other highly respected facilities such as the E. H. Rowley Company of Detroit be represented on the clinic team at Ann Arbor.

12. As Mr. Stokosa said to us he would like very much to let the situation which developed from an incident last summer "mellow". In our discussion with him we also advised him about not sending reminders to veteran patients about check-ups on their prostheses; he agreed not to do this, verbally complying with our request that in providing that kind of service to veteran amputees he ask the Prosthetic Representative at VAH Allen Park (and eventually, the Prosthetic Representative at VAH, Ann Arbor) to perform the follow-up on patients he fitted but on behalf of the Veterans Administration and not on behalf of Prosthetic Services of Lansing. Mr. Stokosa appeared to be quite conciliatory about the whole situation. We respectfully advise that the VAH Ann Arbor consider these findings of ours and our observations, with the possibility of allowing a representative of Prosthetic Services of Lansing, approved by Dr. Konzen participate in the clinic team. This, as a matter of fact, was recommended by Dr. Spencer acting for Dr. Lindenauer, Chief of Staff,

in a letter of June 20, 1975 but apparently during later months there was a change in attitude. We would urge this proposal by the Acting Chief of Staff be considered on a trial basis.

ANTHONY STAROS,
Director, VA Prosthetics Center.

APPENDIX B

LAKE CITY, MICH., *December 10, 1975.*

TO WHOM IT MAY CONCERN: I am writing in regard to the unsatisfactory service I have received from the Veterans Administration Prosthetic Clinic in Ann Arbor, Michigan.

In middle January of this year, it was determined by my prosthetist, Mr. Jan J. Stokosa of Prosthetic Services of Lansing, Michigan, that a new A. K. Socket was needed due to proximal irritation and other adverse effects caused by shrinkage and improper socket design. Mr. Stokosa recognized any attempts to alleviate these conditions by use of liners would be futile.

On July 18, 1975 I was admitted to clinic for evaluation and presented a letter from my prosthetist to Dr. Konzen, Clinic Head, elucidating my condition. Dr. Konzen proceeded to prescribe lateral padding (without corraboration form the prosthetists present).

Although Mr. Stokosa disagreed with the corrective merit of the prescription, he filled it as ordered. The discomfort problems continued. The proximal irritation worsened, adema developed, and muscular fatigue increased as stamina declined.

On September 16th, I again appeared in clinic requesting a new socket be ordered. I reminded the doctor padding had been put in—a pink colored posterior fill and a white lateral pad, the color as the socket itself. Dr. Konzen could not recognize the lateral pad and again denied my request stating "if Jan (Stokosa) had put the lateral liner in the first time, I (Snyder) would not have to be back here now." I also reminded the doctor (1) it had been a year since I had a new prosthesis, (2) eligibility was established, and (3) I had no workable spare. She again reiterated her position and further said I was eligible for a new prosthesis only if in her medical opinion I really needed one—regardless of length of usage, and she was responsible "to not waste the taxpayers money."

After Dr. Kozen failed to see the lateral padding and failed to recognize my best interest as her patient to promptly take proper corrective measures for my discomfort, it was then I questioned her proficiency in prosthetics and took steps to obtain a second opinion.

On November 17, 1975 I appeared before the clinic staff headed by Dr. Pendy in Allen Park, Michigan for prosthetic evaluation. Authorization for a complete new prosthesis was ordered that day.

Sincerely,

JOHN F. SNYDER, Jr.

MARCH 22, 1977.

HELEN PAVELICH,
Prosthetics Dept., V.A. Hospital,
Allen Park, Mich.

DEAR HELEN: On February 25, 1977 I attended the prosthetic clinic and had a new leg authorized by Dr. Pendy. I identified my prosthetist as Jan Stokosa of Prosthetic Services in Lansing, and as in the past, there was no objection to Mr. Stokosa expressed at that time.

Due to a shrunken condition of my stump, which was causing me extreme difficulty in keeping my leg on, I took my authorization to my fitter the following day, Saturday, February 26, 1977 and asked him to put me into a new leg as soon as possible, whereupon he cast my stump and proceeded on my new leg as the papers were being processed. I was scheduled for a check socket appointment when I learned the order has been held up by V.A. due to a technicality in my prosthetists' contract.

I am asking that my prosthetist be allowed to finish my limb as soon as possible so that I can get back into normal activity.

In the 33 years that I have had to rely on an artificial limb I went from one prosthetist to another, in search of a comfortable fit, until I discovered Stokosa, who, for the past several years has been totally satisfactory.

Now, at age 60, I don't want to have to go shopping and experimenting again.

Please, Helen, will you see if there is anything we can do to overcome the technicality and make it possible for me to pursue my fitting with my own prosthetist, Mr. Stokosa, as soon as possible.

I will be standing by (on one leg) awaiting your response.

Thank you,

WILLIAM E. STIELER.

HORTON, MICH.

On or about the 13th of May, 1976, at the prosthetic clinic in Ann Arbor V.A. Hospital, it was decided that I should have a new prosthesis.

At this time I was told that I could not go to Prosthetic Services, Lansing, Mich. for the construction.

I went down to the Chief of Staff office, there I talked to the assistant Chief of Staff and explained the problem.

He said that the disbarment of Jan Stokosa from the hospital was to stand.

He said he would recheck with all parties and make sure of the disbarment.

I requested a reply in writing on his findings.

Shortly thereafter, I received a letter confirming that the clinic would not do business with Jan of Prosthetic Services.

Unfortunately, I misplaced my copy of the letter and cannot remember the assistant's name.

This letter is just to be used to confirm that the Hospital still is not doing business with Jan Stokosa or Prosthetic Services.

LARRY WESTON.

TEMPERANCE, MICH., *August 25, 1976.*

Hon. MARVIN ESCH,
Monroe, Mich.

DEAR SIR: I am writing to enlist your aid in cutting through a knotty bureaucratic problem that I face due to the service connected disability, loss of my right leg, that I incurred while serving my country in the Republic of Vietnam.

Upon being medically discharged under honorable conditions, from the U.S. Marine Corps, in July of 1971, I had my medical records transferred to the Veterans Administration. I was then processed through the V.A. hospital in Ann Arbor, Michigan, and have been under their care since that time.

After much delay, due to the tenderness of a skin graft on my stump, and its inability to accept a prosthetic device, I was finally fitted to an acceptable artificial limb.

Due to shrinkage and wear, I must be periodically refitted for a new limb. The prosthetist who HAD been handling my case from the beginning, Jan Stokosa, of "Stokosa Prosthetics Services" in Lansing, had, by necessity, taken quite a bit of time to get to know me, and the fitting requirements of my leg. Now, for unknown reasons, Mr. Stokosa's work (no matter what I think) is no longer acceptable to the doctor in charge of the Orthopedic Clinic at the Ann Arbor Hospital.

Due to this situation, I am now forced to go the V.A. Clinic an Allem Park, if Mr. Stokosa is to continue caring for my disability. Since this is not practical, I have had to switch to a new prosthetist, in Toledo, Ohio.

Though I have no complaints with the services rendered by Mr. Gary Fessenden, the Toledo based prosthetist, or the doctors and Administrators at the Ann Arbor Hospital, this situation is causing me great pain and anguish.

The pain to which I refer is due to my being provided with an ill-fitting leg, which is the result of Mr. Fessenden's not being intimately familiar with the requirements on my injured leg.

The majority of the problem revolves around a skin graft at the point of amputation. For Mr. Fessenden to be expected to acquire the necessary knowledge, he will need to fit me with two or three more legs; this could take up to two years. Since I have already undergone this painful process with Mr. Stokosa, I have no desire to be resubjected to it a second time.

Upon first being informed of this situation, I called the Director of the Ann Arbor Hospital. The gentleman I talked with was very understanding of my problem, and he promised a full investigation. . . At this time, six months after that conversation, the investigation is still underway, I am still seeing an unfamiliar prosthetist, and might I add, still in quite a bit of unnecessary pain.

I would appreciate it if you would intercede on my behalf so that I may still see Mr. Stokosa through the Ann Arbor Clinic. This will allow for me to receive the best possible medical attention, at a minimal inconvenience to myself, my wife, and my two children.

As a result of this combat connected disability (a booby trapped 81 mortar round), I am not able to work full-time. The added inconvenience of this unnecessary "Red Tape" cuts further into my already limited schedule. In the past 12 months, I have been unable to work a total in excess of five months. My employer is very understanding and has been more than willing to accommodate me. Whenever possible, he gives me "sit-down" jobs, or he adapts to my slower work pace, lessening the production of the entire operation. Needless to say, my employer never complains about the loss of time that I must incur

I have been advised that it is my right as a Disabled Veteran to choose the prosthetist whom I wish to care for me. This above described situation severely limits that choice. Though I have no complaints with any of the medical or professional services rendered me in the past, or the quality of people with whom I have dealt, I feel that the insensitive manner in which this situation has been, and is continuing to be handled, is not at all appropriate. I willingly served when I was needed; now the tables are turned, and I need you and what you can do for this problem. I at least expect to be treated with dignity; I think I have that right.

I thank you very much for your time, trouble and assistance in this matter. Any consideration that you can give will be greatly appreciated.

Very gratefully yours,

Henry H. Wilke, Jr.

These hours, as listed, represent the hours worked and missed for the year 1975 thru June 1976:

	1975 Hours	
	Worked	Missed
January		176
February	56	120
March	132	44
April	70	106
May	90	86
June	100	76
July	92	84
August	157	19
September	152	24
October	104	72
November	134.5	41.5
December	155.5	20.5
Total	1,243	[1] 869

[1] Or 22 weeks missed.

	1976	
	Hours	Hours per month
January-March	293	98
April-June	255	85
July-August	180	90

886 Hours missed in the past 12 months, from September 1975 to August 1976.

Thomas W. Toedter,
General Manager.

TEMPERANCE, MICH., *September 22, 1976.*

HON. MARVIN ESCH,
Monroe, Mich.

DEAR SIR: I am writing once again to thank you for your time and trouble in trying to correct a problem that still exists.

You stated that "after a careful review of facts . . ." what "Facts"; I've seen nothing, heard nothing, and know nothing of why Mr. Stokosa has been banned from the Ann Arbor Clinic.

Since it directly affects me, I think the "facts" should be made known to me . . . maybe I shouldn't even be going to this "Doctor Frankenstein"!

Tell me why, since the Veterans Administration is composed of professional people, or at least supposed to be, that Mr. Stokosa is allowed at one V.A. Hospital, but not the other one? The only reason I can say is just to harass me!

There is quite a distance change and time change to Allen Park, as opposed to Ann Arbor, due to traffic and forty-some miles, considering Mr. Stokosa's office is in Ann Arbor, and might I add, only two miles from the V.A. Hospital, so I have to go to Ann Arbor anyway. All of this extra travel is unnecessary.

However, I won't bother you any longer with my problems, as I know you must have enough of your own. Back to why I'm writing . . . to thank you, as I believe you did all you could, which also proves, even with a foot in the door you don't always get in.

What I would like now is a list of the "Chain of Command". Who is your boss? I need more power, I guess; I'm not going to stop because of an "Administrative Decision". They haven't heard the last of me yet.

Very sincerely yours,

HENRY WILKE.

TEMPERANCE, MICH., *September 25, 1976.*

Mr. ANTHONY STARROS,
Director of Prosthetics, Prosthetic Center,
New York, N.Y.

DEAR MR. STARROS: As I am sure you would expect, I am not at all satisfied with "visiting the Allen Park prosthetic activity in the interim". I believe this entire situation is being blown out of proportion; I can't see how this mess can be that big of a problem that professional people can't sit down and intelligently put an end to this unnecessary confusion.

I don't intend to go to the Allen Park Clinic now or at any time in the future. I don't inted to, because I can't understand why; if Mr. Stokosa's work is good enough for Allen Park, then why isn't it good enough for Ann Arbor?

What I would like to do in the interim, with your permission, is continue to go to Mr. Stokosa and have him make my prothesis, so that I can at least walk without pain, and then go to the Ann Arbor Clinic without Mr. Stokosa being present. If the personnel at Ann Arbor don't want to see Mr. Stokosa, then I am willing to bend enough so as to allow them that consideration. In return, all that I would request would be a written okay from the Ann Arbor Clinic to allow Mr. Stokosa to continue to construct my artificial limb.

I believe this to be a fair and equitable resolution to the problem. I believe that I am meeting the people in Ann Arbor more than halfway, in that I am sacrificing having my C.P. with me at the time of medical consultation and evaluation. There is no effect on the operation of the Ann Arbor Clinic.

I have been advised at this point that I should engage an attorney and bring suit against the Veterans Administration so as to allow the courts to resolve the matter, considering the pain that I have suffered and mental anguish that I have been subjected to. I do not wish to follow this course of action though I feel that through it I would get the desired results; the costs involved would be prohibitive.

When I speak of costs, I refer not to monetary considerations, but the hard feelings that this course of action will surely evoke. Up to this time, I have had very good dealings with the Veterans Administration; expecially considering the physical problems that I suffer, I sincerely wish to resolve this problem without jeopardizing the good relations that have resulted from the past dealings.

I wish to thank you for your attention to any assistance in this matter. I feel that, if you can accomplish this for me, the situation will be resolved. In the event that the medical personnel at Ann Arbor don't want to be agreeable to this proposal, then I would appreciate it if you would supply me with the names of your supervisors, those levels higher in your "chain of command", who would be able to exert more influence; thus bringing about a peaceful resolution to this confusion, without going to court.

Again, I wish to thank you for your assistance and consideration. Hopefully, this problem will be completely resolved shortly and operations will return to normal.

Sincerely,

HENRY WILKE.

MATTAWAN, MICH., *September 19, 1977.*

DEAR———: A tragic situation has come to my attention. I am an amputeed veteran from the Korean War. I have worn an artificial limb for 14½ years. I was serviced at the VA hospital in Ann Arbor and recently transferred to the Allen Park VA hospital for prostheses. I have been succesefully fitted by Mr. Jan Stokosa of Stokosa Prosthetic Services in Lansing, Michigan for these years.

I need a new limb and the VA Hospital no longer recommends Stokosa. I will not accept another recommendation when my association with Mr. Stokosa has been totally satisfactory.

I am concerned why the VA Hospital will not allow a contract with Mr. Stokosa. Mr. Stokosa is one of the best qualified Prosthetics in Michigan. The patient and his concerns are Stokosa's major interest. He gives of himself freely and totally to his patients. On numberable occasions, he has seen me early a.m. or p.m.; whatever is convenient for me. Stokosa teaches skiing to the physically handicapped. This is done free of charge. Mr. Stokosa is an Examiner for 1977 National Certifications Examinations.

Stolosa requested the Veterans Administration investigate his professional relationship with the VA Hospital in Ann Arbor during the spring of 1976. Mr. Anthony Staros and consultants complied with this on March 11, and 12, 1977. A report was submitted summarzing their visit and concluded with the summarization that Mr. Jan Stokosa was an excellent prosthetic fitter, second to none. It was recommended that Stokosa continue to fit amputees with artificial limbs.

Dr. Claudette Konzen, contrary to professional opinions, has refused veterans the services of Stokosa. As a result of this, Stokosa has lost over forty-seven percent of his patients; his patients have lost a dedicated, proficient prosthetist. This situation screams for investigation.

I have lost a leg for my country—I can accept this. I have lost my prosthetist to bureaucratic red tape—I don't have to accept this.

Sincerely yours,

RICHARD G. KING.

MATTAWAN, MICH., *September 19, 1977.*

Mr. JAMES PELLEGRINI,
D.A.V., Room 1200, Detroit, Mich.

DEAR SIR: I am a veteran amputee with problems with my artificial limb. In September 1979, I had X-rays at the VA Hospital in Dearborn for problems in my left knee. Finally, after three phone calls and one letter, I was granted an appointment to hear the results of the X-ray. This was in February of 1977. (Six months later)

Dr. Rowe prescribed treatment for Arthritis (Motrin) and a ten-pound weight for exercising my good knee. (weight arrived April 30, 1977). This did not help!, I finally had another appointment with Doctor Pendy in August, 1977. He prescribed a new leg. The prescription was for a leg similar to the leg I had before in 1966–1967. The leg prescribed at the time was unsatisfactory as it caused me a bad fall and resulted in fearful caution for my leg.

Last Friday, September 9, 1977, I called to ask Dr. Pendy for a change in the prescription for my leg. I was advised the doctor would return my call. He has not returned the call as of this date.

Please tell me how I can get better communications with the VA clinic.

Also, I have had excellent success with the prosthetic made by Mr. Jan Stokosa. However, Mr. Stokosa is no longer recommended by the VA clinic in Dearborn. It is essential that I secure authorization to go to my original prosthetist, Mr. Stokosa.

Thank you for your consideration.

Sincerely,

RICHARD G. KING.

Congress of the United States,
House of Representatives,
Washington, D.C., November 7, 1977.

Mr. Richard King,
Mattawan, Mich.

Dear Mr. King: I am writing to you in response to your recent letter explaining your difficulty in receiving a properly fit artificial leg through the Prosthetics Department of the Allen Park Veterans Administration Hospital. Enclosed please find a letter I have received from Allen Park VA Hospital Director Mr. Albert Zamberlan.

As you already know, medical supply companies across the state of Michigan submit bids for contracts if they wish to do business with the Veterans Administration. Under the provisions of the law, new artificial limbs and all medical equipment must be purchased from a medical supplier contracted by the VA. Orthopedic Appliance of Lansing did not choose to submit a bid to do business with the VA this year. I know that this is a difficult situation for you to accept, as you have had a very successful professional relationship with Mr. Stokosa for the past 14½ years. The Allen Park VA hospital is aware of the problems which arose between Mr. Stokosa and Dr. Kozen, Chief of the Amputee Clinic at the Ann Arbor VA Hospital. I have written to Dr. Kozen and I will notify you if there will be any change in the current non-contract between the VA and Orthopedic Applicance of Lansing. Under VA regulations the Allen Park VA hospital is obligated to honor the policies established by Dr. Kozen as Chief of the Amputee Clinic in Ann Arbor.

I understand the difficulties and unpleasantness you have been experiencing in not receiving proper medical attention. I will advise you of any further information I receive from the Veterans Administration.

Sincerely,

Bob Carr,

Member of Congress.

United States Senate,
Committee on Commerce, Science, and Transportation,
Washington, D.C., October 14, 1977.

Mr. Richard G. King,
Mattawan, Mich.

Dear Mr. King: This letter is sent in final response to your letter regarding the provision of prosthetic services at the Ann Arbor V.A. Hospital.

I have been furnished with a full report outlining why Mr. Stokosa's working relationship with the Ann Arbor Hospital has been terminated. Without going into great details, it is my opinion that the Hospital Director was justified in his action. Therefore, I regret to inform you that I am unable to be of further assistance in this situation.

If in the future, you feel I can help you with other matters relating to the federal government, please do not hesitate to contact me.

Sincerely,

Donald W. Riegle, Jr.,
U.S. Senator.

August 7, 1979.

Gentlemen: I am writing this letter in support of the Institute for the Advancement of Prosthetics. Early this year I had the pleasure of talking to Mr. Jan Stokosa at the Institute. Jan spent about an hour explaining what he thought could be done to improve my situation.

Afterwards, I contacted the Veterans Adminstration for approval. Unfortunately, the I.A.P. did not come to terms with the V.A. and as a result, the prosthesis I had hoped to get will have to wait until I can find the funds necessary. It is very discouraging to think that what I feel would be a great improvement to what I have is out of reach at this time.

I have even said I would pay the difference in price from the V.A. contract to the I.A.P. price. This was also turned down. I would hope that something could be done in the future to find a way for the I.A.P to be able to provide what I feel would be an excellent service to more veterans. As I said earlier, I would gladly pay for the difference as I have a great deal of confidence in what they say they can do for me.

Sincerely,

TERRY ROACH.

STATEMENT OF NEAL CARLSON, VETERAN AMPUTEE, JACKSON, MICH.

I was in the Marine Corps. I enlisted in 1966. I lost my leg in Vietnam, July 1, 1968. After getting back to the States, I started going to Mr. Stokosa here in Jackson, Michigan.

This was the hardest time of my life, but it was a good time as Mr. Stokosa helped me with my leg and he cared. He would see me after work or on weekends so I wouldn't have to take any time off work.

He made me good legs that lasted. He made me think at that time that I did the right thing by going to Vietnam. But now, after almost fourteen years, I am going downhill. I have taken pain pills and done more drinking than I should to help me get through the day because of the pain. Some days are good but they are few. After May of 1975, I had an operation on my leg for the correction of the incision which was done in Vietnam. After this Ann Arbor Hospital told me I could not go to Mr. Stokosa any more when I really needed him. So I had my records moved to Allen Park Hospital because he had a contract there but after the so called paper work was done there was no contract any more.

When I went to Mr. Stokosa, I was on my leg all day doing carpenter work six to seven days a week. I'm telling you, I was better than most.

But now I sit at a desk and go out and look at new jobs and keep our jobs going. We have fourteen men working for our company at this time.

Now I have a real hard time making it to five o'clock when I can get my leg off. I did bowl two times a week before. Now I'm only bowling one time and not doing good at all and this may be my last year.

As you must know by now, I'm going to another prosthetist. After my operation my new prosthetist made me a leg I couldn't get on but Allen Park Hospital paid for it. They also saw that I couldn't get it on. They tell me Mr. Stokosa's legs cost too much. I couldn't get the new leg on so I used my old leg from before the operation for one year. Now, you tell me that was a good fit?

Now, I have a new leg since last December. To this day though it doesn't feel good. It doesn't do any good going back to where they worked on my leg—I just should stay home.

I have called them on Thursday because I couldn't stand the pain and I just didn't want to go through it any more, but they couldn't find the time for me.

So after fourteen years, I wonder if I did the right thing in enlisting. I wonder, is it better to have a leg you can use for years or one that doesn't fit but the hospital pays for? Also, if you tell them it is not right they can't do anything for you anyway—you just keep going back for repairs which don't do any good and it costs you time off work and gas money to go.

PREPARED STATEMENT OF JERRY E. VILMINOT, CERTIFIED PROSTHETIST

The evolution of this approach to amputee rehabilitation began when the Surgeon General of the Army established a number of amputee centers within the Army's general hospitals to up-grade the treatment of the combat amputee. It was believed by gathering the appropriate medical and paramedical personnel with a centralized location, a more scientific and quantitative approach could be given the prosthetic rehabilitation program of each patient. However, questions have been raised recently challenging the efficiency of such a clinic and the desirability of a more advanced approach concerning the prosthetic component selection and ultimate prescription rendering.

With the United States participation in a 1978 survey of 19 Veteran's organizations in 14 countries belonging to the World Veteran's Federation indicates that the major complaints of amputees include: first, poor fitting of artificial limbs; second, unsatisfactory dissemination of knowledge to doctors and amputees regarding new prosthesis; third, lack of opportunity for input from amputees; fourth, inadequate measures to deal with phantom and stump pain.

Of the four major complaints, three could be lessened to a degree of tolerance by considering a somewhat different approach which is contrary to existing procedural guidelines.

1. *Poor fitting of artificial limbs.*—I have heard countless horror stories of amputees enduring extreme discomfort and pain caused by ill fitting and inappropriately prescribed prosthetic devices.

The technological expertise of the prosthetist has advanced significantly in the past 25 years. Unfortunately not all men are treated equal in terms of possessing the artistic ability to create a usable product. There exist a fitting tool which has the means of equalizing most practitioners regardless of their competency level. A more scientific approach to achieving the most precise socket fitting possible is the use of a transparent test socket on every above and below-knee amputee. The transparent test socket is a relatively rigid material vacuum formed directly over a positive mold of the amputation stump. It is a tool to determine the extent of additional modification that will be required to obtain an optimum fit for the definitive prosthesis. Current standard practices of establishing proper fitting is only guess work. Extensive test socket research began back in the 1950's by the Navy Prosthetics Research Laboratories. Numerous other research groups have done studies up into the late 1970's resulting in the same basic premise. With the advent of new vacuum forming materials, the test socket provides a more scientific evaluation of the stump-socket interface relationship and is believed there will be a substantial reduction of post fitting complications.

It is interesting to note that the V.A. presented photographs of their experimentation with transparent test sockets in the Orthopedic Appliance Atlas published by the American Academy of Orthopedic Surgeons in 1960. Their results were most favorable. Yet 21 years later, will not reimburse the prosthetists for their use on amputee patients.

2. and 3. *Unsatisfactory dissemination of knowledge to doctors and amputees regarding new prosthesis and lack of opportunity for input from amputees.*—Through experience, I know that prosthetic clinics in the private sector as well as in the V.A. systems have become "grooved in" to a basic prescription which systematically uses the most unsophisticated components available for sake of what they call "expedient patient management". It is my opinion that this type of prescription rendering displays a total lack of imagination as it divides patients into no more than the simplistic categories of above or below-knee amputee.

Loss of countless man hours, wasting precious components and materials occur when the prosthetists views on alignment, fitting, and finishing procedures fail to be shared by doctors and therapists who are not aware of the latest technical advances. A device often had to be severely altered, or sometimes completely done over for rather trivial reasons. The quality of the patient-prosthetist relationship can suffer tremendous damage when those problems are exposed publicly rather than dealt with in a private setting. It is unrealistic to expect all physicians and other related medical personnel to be knowledgable and current, not only in their own specialty, but also in the prosthetic profession. One must consider the multitude of refinements and alterations that have been made in traditional devices as well as in the many entirely new sophisticated systems that have been developed.

On numerous occasions, I have observed prosthetic clinic chiefs who prescribe a "carbon copy" prosthesis with no other consideration than the fact this particular patient has worn the same type of limb for the last 25 years. In most cases, the patient is not allowed to participate in any decisions concerning prescription rationale, and it is my conviction that most patients may actually be intimidated by such a vast host of professional personnel. Regardless of the manner in which the prosthesis was formulated, the patient is the ultimate recipient and he must function the best he can in pursuit of basic survival.

It is impossible for any individual to determine in a brief clinical session which prosthetic components is best suited to an amputees needs. This fact should eliminate the customary written prescription by the amputee clinic chief. His primary input would be to confirm that there are no medical conditions present to contraindicate the use of a prosthesis. The most expedient method of establishing what is appropriate in each case is to allow the patient to ambulate on various components. Then, utilizing the patients input, the prosthetist can render a more intelligent prescription and recommend components that will be totally suited to each individuals needs. The Veteran's Administration can help accomplish this major goal of providing the most extensive and thorough evaluation by reimbursing the prosthetist in the form of paid segments of time to be used by the prosthetist as he deems necessary. This will give him the means to accomplish this objective most efficiently. The decision as to whether or not accepted standards and principles have been met in the fitting, alignment, and fabrication of the prosthetic device should be entirely left to the prosthetist.

In conclusion, the field of prosthetics has come of age; so have its practitioners. Many problems could be lessened, even avoided, through a more enlightened understanding by the physicians and the Veterans' Administration to the vital role of the prosthetist. The prosthetic practitioner is no longer simply a supplier of a mechanical product. He now provides professional services which offer the patient the highest degree of rehabilitation and quality of life as the end result of his experience, training, and education in a highly specialized field.

As a matter of record, the Veterans' Administration spent $8,000,000 on prosthetic research in 1980. For fiscal year 1981, there are plans to petition Congress to fund this program for a record $9,000,000. This huge sum of monies are being spent to develop new and sophisticated treatments for the disabled yet the government is not willing to pay for technology that is presently available. We don't necessarily need all new ideas, we need to apply the ideas we already have.

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Prepared Statement of Alan Finnieston, C.P.O.

Mr. Chairman and Members of the Subcommittee: Thank you for the privilege of appearing before the Subcommittee and to present my views and experience on prosthetic and orthotic rehabilitation of veterans.

My name is Alan Finnieston. I am a prosthetist and orthotist certified by the American Board for Certification in Prosthetics and Orthotics, President of Arthur Finnieston Inc., my practice, and President of Maramed Precision Corporation which researches and develops systems for prosthetics, orthotics and orthopedi. My clinical association is with Variety Children's Hospital and with the University of Miami Department of Orthopedic Surgery and Rehabilitation.

My colleagues and other speakers have referred the final report of the Committee on Prosthetic Research in the Veterans Administration—1976, and to eliminate being redundant on limited time, I suggest a detailed review of this report. The problems are the same in 1981 but more acute.

It's fiscally unsound to treat veterans requiring prosthetic rehabilitation under the present system. The G.A.O. report, B-204389, September 22, 1981, states that 9,243 amputees were fitted with permanent prosthesis at a cost of $9,330,000 or slightly over $1,000 per case. This is shared by 405 prosthetic facilities or a gross of $22,000 a year per facility. Needless to say I have not held a VA contract for 15 of my 21 years practicing prosthetics and orthotics.

The VA through its contract policies (reducing services and rehabilitation to a bag of potatoes bid basis) have managed to economically influence the entire field of prosthetics and orthotics. The end result is a decadent system of delivery of services, equipment and research for the handicapped person.

The GAO Report states 1980 VA Research and Development funding is $3.4 million and NIHR $8.2 million in 1981. Developments from the research and development in the last ten years are non-existent from a practical day to day standpoint. Most of the new techniques, components and technology used today are from the private sector. Therefore, it is my opinion research and development funding is placed in the wrong hands.

A perceived manpower shortage of prosthetists and orthotists have reduced the upgrading of requirements and education. Advanced technology, production, and equipment are available to be used in the rehabilitation field, however, funding for practical private development and education are non-existent, thus falsely producing a manpower shortage.

In summary, the overall dollars spent for prosthetic services, research and development are realistic. Research funding to the private sector would produce practical techniques and procedure.

Thank you very much for your time and interest.

PREPARED STATEMENT OF DONALD H. SCHWAB, DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE, thank you for the privilege of appearing before this distinguished Subcommittee to present the views of the Veterans of Foreign Wars of the United States.

My name is Donald H. Schwab, and it is my privilege to serve the more than 1.9 million men and women of the Veterans of Foreign Wars as their National Legislative Director.

Mr. Chairman, the record reflects that the Veterans of Foreign Wars has long supported research in the Veterans Administration, a program which has not only assisted veterans, but all mankind and helped immensely to recruit and retain doctors and other medical personnel. History indicates that it was way back in 1924 that a policy of research was adopted by the then Veterans Bureau, headed by General Hines. Since that time, medical and prosthetic research within the VA has brought worldwide acclaim in the form of many awards and honors to research personnel including two Nobel prizes.

Mr. Chairman, the VA furnishes nearly a million veterans with prosthetic and sensory aids each year and is responsible for the development of such devices and assistance to veterans in adapting to them. Continuing research addresses such areas as the development of new prosthetic devices, biomechanics, and new devices to replace or restore lost limb function, among others.

In addition, the VA carries out an extensive Prosthetics Treatment Program which provides prosthetic appliances and services to veterans each year. Under direction of the VA Central Office which plans, develops, and directs the Prosthetic and Sensory Aids Program, there is a nationwide network to assist veterans. In Denver there are the VA Prosthetic Center (VAPC) and the VA Prosthetic Distribution Center (VADC). The VAPC is involved in research, development, and testing of prosthetic and orthotic appliances (the latter for the straightening of a deformed or distorted part), and the VADC stores and distributes appliances and supplies to include stump socks, hearing aids and batteries, and aids for blinded veterans. Twenty Prosthetic Treatment Centers handle all problem cases; 53 Orthotic Laboratories are authorized to make temporary protheses and may fabricate and fit temporary limbs; 11 Restoration Clincs fabricate artifical eyes, cosmetic hands, plastic ear inserts, and facial and body restorations. Rounding out the program, 65 VA Medical Centers employ Prosthetic Representatives who, themselves, wear and use a major prosthetic device to assist veterans and 88 VA Medical Centers have Prosthetic Clerks who complete the paperwork for procurement or repair of protheses or orthoses.

Mr. Chairman, the veterans our Field Representatives interview while surveying VA Medical Centers, those seen by our Service Officers and members of our staff who wear prosthetic appliances themselves, almost without exception have nothing but the highest praise for the appliances furnished and the maintenance thereof. Complaints we do hear are with respect to the timeliness of receipt of needed aids which for the most part is not the fault of the VA, but, rather, of contractors and vendors who fail to meet delivery dates.

The primary concern of the VFW at this point in time, Mr. Chairman, is funding and staffing for both the Medical and Prosthetic Research Programs. Mr. Chairman, there have been so many figures put out in the last 10 months with respect to the fiscal year 1982 budget that it is most difficult to ascertain at any given time the funding available for any function. However, it would appear that the Administration has cut funding for medical and prosthetic research by some $27 million, from $155 milion to $128 million. The March reduction was $9.7 million and the latest figures available indicate last month's cut is an additional $17.5 million. In addition, the President has sent to Congress a deferral of $2.5 million in research. Whatever the final reduction in medical and prosthetic research, the money must be taken from personnel. The original budget authorized staffing of 4,601 personnel for this function and if present cuts are sustained, personnel reductions of 25 percent to 30 percent will be incurred in this important activity. Needless to say, severely disabled veterans will feel the impact of reduced service and the recruitment of professional personnel will also suffer.

In closing, permit me to commend you, Mr. Chairman and the Chairman and Ranking Minority Member of the full Committee for your letter to the Chairman of the Subommittee on HUD-Independent Agencies of the Appropriations Committee, pointing out that the proposed additional cuts in the VA budget of $451 million are not in accordance with the firm agreement with the Administration when Congress agreed to the Gramm-Latta Substitute Budget Resolution.

The Commander-in-Chief of the Veterans of Foreign Wars, Arthur Fellkwock, sent a telegram to the Director of the Office of Management and Budget labeling this proposed cut "unacceptable and reckless" and furnished a copy to every Member of Congress. Our news release based on that telegram is appended to my testimony.

This concludes my testimony, Mr. Chairman, and I will be happy to respond to any questions you may have.

VFW OPPOSES FURTHER VA BUDGET CUTS

WASHINGTON, D.C.—The following telegram was sent to David Stockman, Director of the President's Office of Management and Budget, from Arthur Fellwock, National Commander-in-Chief of the VFW, relative to further cuts in the Veterans Administration fiscal year 1982 budget:

"It is now apparent that the Administration plans to undertake an ambitious program to further cut federal spending levels, and it is proposed that the Veterans Administration absorb an additional $421 million of these cuts in fiscal year 1982.

"This negates the tremendous effort expended by the VFW in support of the Gramm-Latta Compromise Budget, which the Administration and your office agreed would be its budget and would be fully supported by the President.

"It has been repeatedly indicated by the President himself that Veterans Administration functions for the 'truly needy' would be 'exempt from cuts,' and we had been assured that veterans hospital care and other veterans entitlements (such as compensation and pension) would be protected.

"To further reduce Veterans Administration fiscal year 1982 expenditures by $421 million would, in our view, require cuts in these 'truly needy' programs.

"Frankly, we view this new proposal by the Administration to be a breach of faith with promises made to the veterans of this nation and that it is indicative of the duplicity practiced with great facility by the previous Administration.

"On behalf of the 2.6 million members of the Veterans of Foreign Wars and its Ladies Auxiliary, we respectfully request that this unacceptable and reckless proposal be abandoned and that the Administration stick with the Gramm-Latta amendment, so that a measure of the faith that we have so arduously developed with this Administration may be restored.

"For your information, a copy of this telegram is being supplied to every Member of Congress."

STATEMENT OF R. JACK POWELL, EXECUTIVE DIRECTOR, PARALYZED VETERANS OF AMERICA

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE: I wish to thank you for this opportunity to present the views and concerns of Paralyzed Veterans of America on the subject of the Veterans Administration prosthetics programs.

Mr. Chairman, PVA's involvement with the area of Veterans Administration prosthetics programs encompasses research, development, evaluation, acquisition and distribution of the working product and repairs. We are also concerned about the Veterans Administrations' policies regarding management of the budgetary and personnel aspects of prosthetics programs. I believe it is appropriate to illustrate how important this subject is to all PVA members and those other veterans and non-veterans whom we represent or interact with through our national Service Program and national Research Program. A person who has incurred spinal cord injury or dysfunction is often dependent upon prosthetics from the time of initial medical treatment through the remainder of his or her life. When first admitted to a hospital, many SCI cases require medical stabilization to prepare the patients for complicated medical procedures which will be performed. This period may be the veterans' first contact with prosthetics as various devices are used to constrict or restrict movement of all, or parts, of the body to prevent further neurological damage. In both the pre- and post-operative stages of treatment, the SCI patient care plan may require additional prosthetic devices to assist the healing and recovery processes. When patient rehabilitation begins an additional group of prosthetics devices is utilized to educate and train the individual to adjust to a new lifestyle. And, hopefully, when the SCI veteran is returned to a life outside the hospital a wide range of additional prosthetic devices to assist in daily living are needed.

The prosthetics aids for the SCI veteran can cover a wide spectrum of available devices. These devices can be as simple as an arm's wrist and fingers mold with an adapter to hold a fork or spoon to assist in self-feeding or as complicated as the integrated mechanical and electrical automobile adaptive equipment system which enables a high-level quadriplegic to drive himself to work. PVA members use both of these devices and a wide range of other prosthetic aids such as leg braces, personal external collection systems, and electric or self-powered wheelchairs to enable them to lead full, productive and self-satisfying lives. I hope that this information illustrates the importance of the area of prosthetics to PVA.

It is equally important to understand that each of PVA's 12,000 members has unique needs for a range of prosthetics device. The VA prosthetics system must be able to deal with each individual in a personal, sympathetic, knowledgeable, timely and consistent manner. Often the psychological adjustment to the use of prosthetic devices can be as important to the veteran as the physical adjustments. The complete mechanical benefit may be impaired if the user of the device is not psychologically prepared.

PVA, as a national service organization whose members are major users of the VA proshetics programs, has historically been involved with the system and continuously worked for its improvement. PVA's goal is to insure the the best possible product is available to the veteran at the least possible cost to the VA. The VA prosthetics program is today encumbered with certain problems which we hope the new VA Administrator and the Subcommittee can rectify. An example of the existing overall problem can be found in the "Final Report on the Committee on Prosthetics Research in the Veterans Adminstration", National Academy of Sciences, 1976, which indicated the United States has lost world-wide leadership in this vital area. Previously, the VA had been the provider of a national program which greatly benefitted the veteran and the civilian disabled communities. To quote from the National Academy of Sciences report:

The Veterans Adminstration (VA), in view of its charge to ameliorate the plight of war-injured veterans; has properly been concerned with prosthetics for many years. After World War II, it assumed a role of leadership and earned an international reputation for excellence through it research, development and clinical application in the field of prosthetics.

The Medical care provided during the Vietnam War was superior to that of the Korean War or contemporary civil emergency services. The need of the resultant surviving handicaped veterans, many with multiple handicaps including spinal cord involvement, placed new demands on the prosthetics service of the VA. (NAS Report, 1976)

PVA believes that a simplified explanation of the existing problem is that the system has overwhelmed the people involved. A review of the historical development of VA prosthetics programs may well be the best way to describe and understand the existing problem.

Immediately following—and because of—World War II, the VA initiated a major national program of prosthetics research and development. The intent and direction of the program was to use available technology to develop devices which would assist the large number of veterans who had incurred paralysis, anatomical loss, or other injury during the war. The VA became the world-wide leader in this field and remained so for a period of 20 years because of its ability to provide a unique environment on a national scale with adequate funding. The VA was able to recruit and retain the most advanced, able, and motivated personnel in the field of prosthetics because it controlled the major portion of federal programs in this area. The result was that many new prosthetic devices were invented.

These devices were clincially tested, refined and improved and made available to the veteran. Good communications between the research engineers, the medical community, the provider, and the user resulted in increasing refinements in design, advanced methods of production, and education and training in methods of application. Both the VA and the private sector were involved. The VA as leader of the national program involved private individuals and organizations in all aspects of the program. The VA was instrumental in training a large number of personnel and attempting to provide an economic atmosphere which would induce private industry to enter this field on a profit-making basis. With their existing technology, the VA worked with the private sector to accomplish its goals. In doing so the VA, in effect, created the basis for profitable cooperation and creation of a new industry. It is important to note that at the time of these accomplishments the VA program was under the control and authority of Veterans Adminstration Central Office (VACO). By retaining authority and control over budgetary, personnel, reporting, and planning functions, VACO established and directed a nation-wide program which became a national resource.

As it developed this program evolved into four distinct functions which integrated on a "triple-tier" level throughout the country. The functions were Research and Development, Product Evaluation, Education and Training, and Communications. The three levels of operation were national, intermediate (located at local level but still responsible to and controlled by national) and local.

Research and Development at the national level controlled, defined and provided resources for scientific and clinical research; application of theory to product development; production facilities design and improvement; private sector production, and long-range planning. Scientific research was funded through the national level for pure theoretical, scientific investigation by both VA and private research projects. Clinical research at the local level was coordinated to determine patient needs and identify areas for product development and theoretical research. Theory application was done at all levels with the national level coordinating design studies to match research with requirements for a product which would provide for patient needs and alleviate known problems. The design, construction, and operation of methods and facilities for producing the actual prosthetic device were carried forward at the national or intermediate level. Long range planning was used as a management technique at the national level to co-ordinate all activities in the VA prosthetics program.

Program and Product Evaluation was used to oversee the results of Research and Development through review or testing of scientific studies, development projects, and clinical application of products. The resulting information was provided to all levels. This area was responsible for developing standards which could be applied nation-wide.

Education and Training was a crucial area where all levels were informed of recent developments in Research and Development and the availability of new or redesigned devices. This area provided training to both VA and private sector personnel to insure that prosthetic devices were properly designed, engineered, produced, and applied. This effort was achieved through cooperation and communication at all levels under national direction and control. The goal was to have a well designed and engineered prosthetic device properly constructed so that the prosthetics, medical, and therapy staffs could provide the user with the best-suited prosthetic device and be sure the user was getting the maximum benefit.

Communications was responsible for the flow of information from and to all levels and functions. This goal was accomplished through formal channels such as publications and seminars. Individuals working at any level and in any function were provided access to a broad range of information. This action allowed them to keep abreast of developments or changes which affected the whole program or their individual concern. An informal channel of information exchange was developed which allowed personnel to share information and ideas. Communication also provided management with the capability to monitor the overall program. The private sector was involved in this area because the VA was the national coordinator of all aspects of prosthetics.

This nationwide VA program was able to conduct research; design and engineer prosthetic devices; arrange for production; train the prosthetics personnel, therapists, and medical staff to best assist the user. The end result was quality care and the most modern prosthetic devices for the veteran.

At some indefinite time approximately 20 years after World War II, the VA prosthetic program underwent a change in direction from that previously described. The reasons for this change are obscurred in the impact of internal and external policies and attitudes on the program.

The VA program attracted some of the best people in the field because it was the acknowledged world-wide leader in prosthetics. As the program expanded the intermediate level, which was staffed by knowledgeble and energetic personnel, began to exercise more control and independence. This evolution was especially true in the areas of Research and Development and Education and Training. The result was a gradual shift of central management control away from VACO to these programs as budgetary, personnel, planning and review activities were delegated from VACO to intermediate or local levels. At the same time funding for prosthetics at the federal level was dispersed to include other departments or agencies such as the Department of Health, Education and Welfare.

The United States was also going through a change in attitude towards engineering, researcfh and development, education, and job training. Developments in these fields led to a rapid technological "explosion" as we entered the "space age". Some of the results were an increased emphasis on theoretical or "pure" scientific research and development, and engineering. Also, the fields of electronics and automatic data processing (ADP) experienced fast-changing and innovative advancements. There was a movement towards specialization of job function of personnel as further advances were made in all areas.

The effect of the advances and changes indicated was the fragmentation of the nation-wide VA prosthetics program. The intermediate level managers used their abilities to continue the trend of moving control and authority away from VACO to their program level. There was no successful attempt to maintain central control over what still existed as a nation-wide VA prosthetics program. As more responsibility was delegated to other level managers in budgetary, personnel, planning and review less authority remained at VACO. This drift towards fragmentation resulted in a loss of identification with an integrated nation-wide program as managers who could not be effectively controlled by central authority began to narrow the range of their activities. The influences of the national change in attitudes in education, engineering, and research and development tended to support the move towards fragmentation and specialization. Engineering and some areas of research and development became "glamorous" and received more attention than other areas. The trend towards job specialization reinforced attitudes towards compartmentalization, narrowed the scope of many jobs, and led to a further decline in the interaction of the various components of the prosthetic programs because the free flow of information slowed or stopped. Employees found the range of their activities considerably restricted and concentrated their efforts within narrow specialties. The VA prosthetics program degenerated into a fragmented, noncommunicating system with authority dispersed to different levels and individuals with no common ground to work on.

During a government management review of the entire VA system in the early 1970's major changes were made in the Department of Medicine and Surgery (DM&S). These changes completed and institutionalized the fragmentation of the nation-wide prosthetics program. Various components of the program were placed under four different departments within DM&S and various intermediate or local programs. The changes resulting in loss of authority and control by any cohesive group of individuals or departments at VACO resulted in the loss of perception of being involved as part of a national program by the prosthetics people at the intermediate or local levels. This status continued with further drift and national fragmentation being recognized by reorganizations within the VA system in 1974 and 1980.

That, Mr. Chairman and Members of the Subcommittee is the situation as PVA views it today. And this is an appropriate time to interject and emphasize that without the dedicated, hard work of a majority of the VA career prosthetics personnel we believe the situation would be unworkable. These individuals are attempting to deal with a system that frustrates their efforts. Yet, even so, they do a remarkable job. PVA does not have a specific agenda to reform the system. But we do have some points we would like to place before you as you take action in this area. Mr. Robert Nimmo, VA Administrator, has announced that one of his major goals is to review the management capabilities of the VA system. Also, he has indicated a desire to improve the VA's long range planning capability. PVA believes that the VA prosthetic programs would be a prime candidate for the Administrator to use in implementing these policies.

We hope this Subcommittee and the VA Administrator will find a way to revitalize VA prosthetics programs and make them once again an internationally recognized national resource.

The process of improvement and the environment in which it takes place are equally important. It is obvious that fragmentation of programs and an increased reliance on the private sector have contributed to the decline of the VA prosthetics programs. PVA agrees totally with the National Academy of Sciences recommendation that "the VA take the lead in establishing high quality coordinated programs and apply its resources to develop, test, and encourage the availability of prosthetic and orthotic rehabilitation aids."

PVA believes that concentration on solving the problems of the various programs and individual patient complaints must be balanced with the need for restoring a cohesive, nationwide system of its former pre-eminence. Any efforts to improve the Prosthetics programs must be comprehensive and systemwide. A patchwork approach which addresses only the most glaring problem or vocal complaints will serve to reinforce and exacerbate the present fragmentation.

Regardless of what plans are considered, the first area of concern is that the VA be provided with adequate resources to accomplish its assigned goals. An improved nation-wide program requires adequate funding at all levels. Also, the ability to provide funds within the framework of long-range planning should exist. Programs at various levels should not have to depend on individual efforts to acquire funds often at the expense of complimentary programs at the same level. There should be one place or group which can provide adequate funding for each program within the framework of a national system. Both the Administrator and this Subcommittee must continue to work towards this goal. Mr. Chairman, PVA believes that your efforts in this area, as evidenced by your October 6, 1981 letter to Representative Boland protesting proposed additional budget reductions of $22,484,000 in medical and prosthetic research are indicative of the problem.

The most important resource the VA currently possesses is highly motivated and competent personnel. The present system fails to properly utilize this resource. Personnel at different levels often find themselves working at cross purposes because of inadequate lines of authority or duplication of programs. At the hospital level prosthetics personnel should be working within the team concept to provide the patient with the best possible care. Because of a lack of coordination, by hospital administrators of medical and support personnel, the team concept is not implemented or is implemented in such a manner as to reduce the effectiveness of prosthetics personnel. Education and training of prosthetic personnel is not being properly accomplished. Because of the existing fragmented system a lack of coordination exists. This is an especially crucial time in this area. Many of the personnel who entered the field during the post World War II era are retiring. The failure to use their knowledge and abilities may eventually result in a VA-system wide in the competence of prosthetics personnel. The failure to provide an adequate nation-wide capability of exchanging information contributes towards this problem. VA prosthetics personnel do not have the formal or informal channels available for exchanging information which previously existed.

Prosthetics personnel no longer provide the affirmative coordination they once did with regard to the private sector contributions to prosthetics programs. The VA, as noted in our historical analysis, provided the foundation for private contractors to build upon and improve the whole area of prosthetics. Unfortunately, we are given numerous examples of their failure to achieve the basic goal of American free enterprise. Their failure to achieve VA standards on a consistent basis is obvious. Conduct such as private employers failing to properly supervise the work of their employees is inexcusable. Also, the fact that private sector employees are not being adequately trained to perform the work asked of them points to obvious needs the private sector must address. It is interesting to note that the National Academy of Science Report indicates that the VA was once the world leader but that now "in the field of prosthetics the United States has lost its world leadership." This seems to indicate that both the government and private sector have failed to maintain the advantage we once had. The VA prosthetic program is one example which illustrates the concern PVA has with concepts such as the implementation of OMB Circular A-76. The examples presented show that a lack of control can lead to the disabled veteran being denied the best possible health care available. Prosthetics is one area where the VA has traditionally relied on outside providers of materials and services. The fact that the VA has retained its own employees and capabilities in prosthetics illustrates that contracting out is not the answer.

Mr. Chairman, PVA views the need for improved and viable Prosthetics programs as critical to the needs of our members. The evolution of the system to today's fragmented and inefficient operation gives us grave concern. We ask that this Subcommittee and the Administrator of Veterans Affairs take decisive action to rectify the existing situation and to lead the VA's Prosthetic programs back to a position of world leadership. With this in mind I gladly offer the support and any assistance that Paralyzed Veterans of America can provide toward achieving these goals. We will continue to work at all levels with employees of Prosthetics programs to ensure that the needs of veterans are being met.

Mr. Chairman and Members of the Subcommittee, on behalf of the members of PVA, I appreciate the opportunity to speak today. This concludes my statement. I will gladly answer any questions that I can.

STATEMENT OF CHARLES E. JOECKEL, JR., DEPUTY NATIONAL LEGISLATIVE DIRECTOR, DISABLED AMERICAN VETERANS

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE, on behalf of the literally thousands of our members whose disabilities require the use of prosthetic and orthodic devices, the Disabled American Veterans appreciates this opportunity to discuss the VA's Prosthetic Service and Research Programs.

Let me begin, Mr. Chairman, by stating quite frankly that our organization receives very few complaints from veterans regarding the prosthetic services provided by the Veterans Administration. Accordingly, our testimony today will address some of the findings contained in the recent General Accounting Office Report (Issues Involved in Amputees' Use of Artificial Limbs—HRD-Al-144), VA's current organizational problems related to the prosthetics program and the availability of information concerning various equipment which may be provided to veterans under the VA Prosthetic Program.

THE GAO REPORT

On September 22, 1981 the General Accounting Office released a report on amputees and the use of artificial limbs. The report was requested last year by several Congressmen who were concerned that many amputees endured years of frustration and pain because the prosthetic indutry has fallen behind the times, medical personnel have not studied the lastest surgical procedures, or prosthetic practitioners have not received adequate training.

Our organization was delighted to cooperate with the GAO investigators. However, we are compelled, Mr. Chairman, to comment on some of the assertions contained in this Report.

For example, in the segment headed Amputee Experiences and Problems with Artificial Limbs, on page 5 of the Report, the GAO states: "Surgeons and amputees told us that some pain is unavoidable due to such routine occurrences as daily stump changes and the effect of pressure on soft tissue and that this pain was not caused by improper or poorly fitting prosthesis."

Further, on page 6, the GAO reports the following: "Surgeons on the Committee on Orthodics and Prosthetics of the American Academy of Orthopedic Surgeons told us that amputees will have problems with their prosthesis and some amputees would never be satisfied.

The Chairman of the Department of Prosthetics and Orthodics at New York University emphasized three points: (1) discomfort is a normal part of wearing an artificial device; (2) stump changes continually affect the device's fit; and (3) artificial limbs can be annoyingly heavy."

You will note, Mr. Chairman, that these statements all allude to the fact that amputees who wear prosthetic appliances will suffer some degree of physical pain. Frankly if these assertions are true, we question why.

Yet, according to a survey of lower-limb amputees conducted by Kagel, Carpenter and Burgess (1977) two-thirds of the respondents indicated their prosthetic appliances were comfortable and that they were satisfied with them. You will find these statistics on page 7 of the GAO Report.

These seemingly opposite points of view and survey findings lead us to believe, with some degree of certainty, Mr. Chairman, that: (1) some amputees have a higher tolerance for pain than others; (2) that comfort in a prosthesis bears a great relationship to an individual's ability to cope with pain; and (3) that most amputees (particularly among those with higher pain tolerance), do not know whether or not a prosthetic appliance is fitted correctly because, as they are told, pain is necessarily associated with wearing a prosthetic appliance.

In our opinion, it cannot be stated as a matter of fact that veteran amputees are comfortable or uncomfortable in their prosthetic appliances. In this business, Mr. Chairman, it is not as if a veteran who is uncomfortable in his Ford, can exchange it for a Cadillac. The Cadillac of prosthetics is simply not available and may not have even been invented yet.

As we see it, there simply has been nothing new in the area of prosthetic research in the last fifteen years. We believe that the VA has an obligation to place greater emphasis on the development of appliances and devices designed to improve the quality of life of service-connected amputee veterans.

You will note on page 17 of the GAO Report, Mr. Chairman, that: Surgeons on the Committee on Orthodics and Prosthetics of the American Academy of Orthopedic Surgeons . . . told us that, in the past fifteen years, much of the improvement in artificial limbs has been in refinements to establish techniques and devices; for example, replacing wood with plastic laminates.

Six years ago the National Academy of Sciences conducted a study on prosthetic research in the Veterans Administration. In their analysis of the impact of VA-supported research the Academy states:

"Despite large expenditures of money, the VA has not been able to achieve much in terms of reading devices or controlled and powered prosthesis for actual patient use. The sophisticated devices that they have sponsored tend to stay in the laboratory for partial local evaluation and further refinement.

"*It cannot be stated too strongly that in the field of prosthetics the United States has lost its world leadership*. (emphasis added)

Five years later, in the September 1980 Orthodics and Prosthetics, Journal of the American Orthodic and Prosthetic Association, A. Bennett Wilson, Jr. offers the following commentary:

"A review of the Fall 1979 issue of the Bulletin of Prosthetics Research, which includes a progress report from each of the research and development projects in rehabilitation engineering supported by the Veterans Administration and the Department of Health, Education and Welfare, *reveals that a relatively small emphasis is being placed on limb prosthetics and orthodics. Just why this is so is not clear.* . . ." (emphasis added)

MANAGEMENT OF THE VA PROSTHETICS PROGRAM

We believe the reasons that VA prosthetic research has floundered over the past several years rests with its ineffective management of the program.

Prior to 1945, the Veterans Administration had no coordinated program in prosthetics. The problems of furnishing prosthetic appliances had been relegated to a scattered group of organizational elements within the VA, no one of which had overall responsibility of the program. The Prosthetic Program was entirely inadequate to meet the rapidly growing demands of the thousands of seriously disabled veterans being released from active military service.

During 1945, individual veterans and veterans' organizations began a campaign to protest the inadequate handling of this important program. As a result, the House Committe on Labor appointed a Subcommittee on aid to the Physically Handicapped to investigate the problem. Congressional hearings were held in September and October of 1945 resulting in criticism of the Veterans Administration for its conduct of the Prosthetics Program.

Recognizing the sensitive nature of the Prosthetics Program and the need for a positive, integrated program to provide essential services to this special group of veterans, on November 1, 1945 the Prosthetic Appliances Service was established to plan and direct a coordinated prosthetics Program. The basic purpose of this new service was to bring together under one head complete responsibility for policies governing the furnishing and repair of artificial limbs, hearing aids, orthopedic braces and shoes, plastic artificial eyes, and all similar items required for issue to disabled veterans.

On December 28, 1945, Public Law 268 of the 79th Congress, was approved by the President. This legislation, now codified as Section 5013, Title 38, U.S. Code, gave the Veterans Administration extremely broad authority to provide prosthetic appliances. ". . . by purchase, manufacture, contract or in such other manner as the Administrator may determine to be proper, without regard to any other provision of law."

On June 19, 1948, the 80th Congress passed Public Law 729—now codified as Section 216 of Title 38, U.S. Code—recognizing the need for a continuous program of research and development in the long-neglected fields of prosthetic and sensory aids, and authorize the appropriation of a million dollars per year to support this research. The ceiling was removed by Public Law 87-572 approved in August of 1962 and funds may now be authorized in amounts needed to support the program.

These two basic laws, for many years, made it possible for the Veterans Administration to assume a leading role in the prosthetics field, and to establish programs which served as guides for other government agencies and for many foreign countries. However, Mr. Chairman, today this is no longer true. Primarily, because the Veterans Administration's Prosthetics Research Program has declined over the past several years, the United States has lost its world leadership role.

It is interesting to note, Mr. Chairman, that in 1945 the Veterans Administration sought to consolidate the various prosthetic functions under one roof in order to facilitate coordination between patient care, research and development, and education and training. In recent years, however, these functions have been parceled out and placed under a variety of programs throughout the Veterans Administration.

In 1973, for example, a team of management experts from the Office of Management and Budget were assigned the task of reorganizing the Veterans Administration. Many organizational changes were made within the Veterans Administration, particularly within the Department of Medicine and Surgery.

Under this reorganization plan, the Education and Training Division was disassociated from the Prosthetic Service and transferred under the jurisdiction of the Assistant Chief Medical Director for Academic Affairs. The (prosthetic) Research and Development Division was transferred to the Assistant Chief Medical Director for Research and Development and reestablished as the Rehabilitative Engineering Research and Development Program. The VA Prosthetics Center (now the VA Rehabilitation Engineering Center in New York) was assigned to the Associate Deputy Chief Medical Director for Operations—and is now a totally autonomous unit under the direction of the Regional Director of the First Medical District.

In our view, the splintering of the various prosthetic services has been harmful to the program. Obviously research has fallen behind the rest of the world; what training does occur takes place under the direction of a VA office located in California; and, now, we understand, the distribution of prosthetics equipment has been placed under the VA Supply Service.

There exists little coordination between research, training and the Prosthetic Service. Because the VA Rehabilitation Engineering Center in New York has been placed under the First Medical District, they do not feel compelled to cooperate with the VA Prosthetic and Sensory Aid Service at Central Office. In fact, we have learned that since VAREC's budget is controlled by the First Medical District Director, some $1.1 million has been siphoned off the Prosthetics Research Program and used throughout the District for other health care programs. What's worse, Mr. Chairman, the duties of the Director of the Prosthetic and Sensory Aid Service have been relegated to approving claims for automobile adaptive and prosthetic equipment and the Director has little or no control over his own program.

Earlier, Mr. Chairman, I alluded to the commentary of A. Bennett Wilson in the September 1980 issue of Orthodics and Prosthetics. In this same article, he goes on to say:

"A review of the Fall 1979 issue of the Bulletin of Prosthetics Research . . . reveals that a relatively small emphasis is being placed on limb prosthetics and orthodics. Just why this is so is not clear, but one can conjecture that part of the problem is the result of the lack of leadership on the part of the government. Certainly there is little apparent effort being directed to coordination of the efforts that are going into prosthetics and orthodics; there is no formal, and very little informal, effort to evaluate the results of research; and there is almost no liaison between research and education programs."

Mr. Chairman, we think that the original reasons for consolidating the prosthetic services under a single program are as valid today as they were in 1945. Frankly, service-connected veterans who depend on prosthetic and orthodic devices deserve better. Their difficulty should not be rationalized by statements such as ". . . some amputees would never be satisfied" or ". . . discomfort is a normal part of wearing an artificial device"—nor will we accept such remarks as fact.

Through better leadership and management, as well as greater emphasis on research and development of prosthetic appliances, we think such statements can be refuted.

THE NATIONAL ACADEMY OF SCIENCES STUDY ON THE CAUSAL RELATIONSHIP BETWEEN AMPUTATION AND SUBSEQUENT CARDIOVASCULAR DISORDERS

You may recall, Mr. Chairman, that in 1979 the National Academy of Sciences completed its study on the relationship between service-connected amputees and the subsequent development of cardiovascular disorders.

Statistically, the study showed that veterans who suffer lower limb amputations at or above the knee or the loss of both limbs below the knee, have a significantly greater potential to develop cardiovascular disorders. Based upon these findings, in August 1979 the Veterans Administration promulgated regulations extending service-connected disability compensation payments to these veterans for residual cardiovascular conditions.

In an attempt to address the reasons for the statistical findings, the NAS offered the following rationale:

"The minor risk factors of obesity, sedentary life-style (physical activity), personality type, and psychosocial tension, have not been directly evaluated by this study but they have been evaluated by others. *Sedentary life-style appears important in relation to cardiovascular disease of amputees.* Paffenbarger (1970) and Frank (1966) both found an increase in coronary deaths among groups of "less active" males as compared to active cohorts." (emphasis added)

We think this is important to mention, Mr. Chairman, as the further development of prosthetics and orthodics could have a dramatic impact on reversing the tendency for certain single and double amputees to develop cardiovascular disorders.

Presently, many VA Prosthetic Chiefs do authorize special equipment to amputees who wish to engage in physical exercise. Light-weight "competition" wheelchairs, artificial swimmer's legs and exercise equipment may be available to veterans through the VA.

However, Mr. Chairman, many veterans are simply unaware of the availability of this equipment. We believe the VA should make available to all service-connected amputee veterans a brochure outlining all of the various equipment and benefits provided through the VA Prosthetics and Sensory Aids Service. We would further recommend that the VA initiate an outreach effort to appraise these veterans of all the benefits and services available under the Prosthetics Program. In addition, information regarding the latest developments in prosthetic appliances and the availability of such new devices should from time to time be provided to veteran consumers.

In the long run, the expense to provide this equipment to these veterans will be outweighed by allowing them to live healthier and more productive lives.

This concludes my statement, Mr. Chairman, and I wish to thank you and the members of the Subcommittee for allowing us this opportunity to discuss this very important subject.

PREPARED STATEMENT OF VERNON L. NICKEL, M.D., DIRECTOR OF REHABILITATION, SHARP REHABILITATION CENTER, UNIVERSITY OF CALIFORNIA MEDICAL CENTER, SAN DIEGO, CALIF.

DEAR SIR: Mr. Kirk Bauer, a member of your staff has discussed with me by phone my evaluation regarding the Prosthetic Service of the Veterans Administration. He specifically wanted my opinion regarding the final report of the Committee on Prosthetic Research in the Veterans Administration, 1976, National Academy of Sciences, National Research Council.

I would like to state that I generally agree with the criticism of the Prosthetic Service of the Veterans Administration outlined in this report and feel that not only has the program not improved since that report, but has further deteriorated.

I have had considerable contact with the Prosthetic Service of the Veterans Administration since my service as a military surgeon in Europe and the Continental United States during World War II. Following this I was Chief of Surgical Service at Rancho Los Amigos Hospital, University of Southern California, from 1953 through 1957, and Medical Director during the later years. From 1977 to 1980 I was in the Central Office of the Veterans Administration, Washington, D.C. as Director of Rehabilitative and Engineering Research and Developmental Service.

During my service in the Veterans Administration the Prosthetic Service was frequently discussed and it was my distinct impression that there was great Central Office concern regarding this service of the Veterans Administration, including Mr. Max Cleland, Administrator. The Chief Medical Directors, Dr. Chase, Dr. Crutcher, Dr. Custiss, and their Staff were also concerned about this program.

The past history of the Prosthetic Service in the Veterans Administration was one of great distinction, until the mid-1960's. It is my strong urging that major changes be made so that a service that has deteriorated so significantly may be reconstituted to its former level of excellence.

PREPARED STATEMENT OF WAYNE AKESON, M.D., DEPARTMENT OF ORTHOPEDICS, UNIVERSITY OF CALIFORNIA, SAN DIEGO, CALIF.

DEAR CONGRESSMAN DUNN: I am writing to express my concern about the VA Prosthetic Research program. I have some knowledge of the past performance of the program as I was a member of the review of the program in the mid 1970's which was carried out by the National Academy of Sciences through the Research Advisory Council. Several problems were addressed by that review including that of poor management, poor research programs operated by the VAPC, poor testing and evaluation programs and poor Engineering Development to Product Delivery programs. To my knowledge, the report has not had the necessary impact to affect the general level of performance of the VA prosthetics research and development programs. This is particularly distressing, as the VA carries the majority of the research effort in this field.

A serious look at reorganization of the VA prosthetic program is necessary. Coherence of direction of the program is needed. The VAPC runs as an independent "fiefdom" without adequate peer review. The program within the VA hospitals are not sufficiently responsive to patient needs. In particular, the "prosthetic rep" system is inefficient and insufficiently responsive to patient needs and physician direction.

Peer review which is repeated periodically is necessary for quality control. This is particularly true of the VAPC unit which has never submitted research proposals for peer review to the Rehab Engineering R & D merit review board.

Decentralization of prosthetic education by moving that office to Wadsworth means that there cannot be successful integration of education effort with research and development. The Prosthetic Research Bulletin has improved by adding referees to review the submitted papers. However, the Bulletin should receive wider dissemination—as any strong scientific journal—by subscription distribution to interested individuals and to most libraries.

The VA has a tremendous opportunity with this program to be creative and resourceful. The effort can largely be described as pedestrian, however, and unworthy of the challenge. Many of the veterans in this program have service connected disabilites. The deserve better.

Finally, I would hope that the Congress would ask for a reassessment of this program to evaluate these serious charges. The problem in this case is less a matter of money than it is of ineptitude.

Thank you for your attention.

WRITTEN COMMITTEE QUESTIONS AND RESPONSE—HON. JOHN PAUL HAMMERSCHMIDT TO DR. D. EARL BROWN, VETERANS ADMINISTRATION

Question #1 - How much of your total activity is concerned with service-connected veterans?

ANSWER: A review of appliances/services furnished during FY'81, including inpatients and outpatients without continuing eligibility, revealed that 47% were furnished for service-connected conditions and 53% for non-service connected.

A review of the Report for Prosthetic Activities, RCS 10-64, Part III - "Cumulative Inventory of Active Prosthetic Disabilities - Veterans With Continuing Eligibility" revealed the following:

Service Connected Viet Nam	86,751	(12%)	
Service Connected All Other	416,859	(57%)	
Sub-Total	503,610		.........69% Service Connected
Non-Service Connected Aid & Attendance	105,573	(14%)	
Non-Service Connected Other	120,751	(17%)	
Sub-Total	226,324		......31% Non-Service Connected.

"Non-Service Connected Other" includes veterans who require treatment for a non-service connected condition who are entitled to treatment for any disability, i.e., Spanish American War, World War I, Mexican Border Revised, or veterans rated at least 50% for a service connected condition.

Question # 2: What goes on at your VA Rehabilitation Engineering Center in New York?

Answer:

The center provides Rehabilitation Engineering Services in the form of prosthetics, orthotics, restorations and other treatment services to veterans. It is responsible for conducting intramural research, development, testing, evaluation and educational programs in the field of prosthetics. The Center also establishes specifications and standards for design, function and workmanship in the field of prosthetics and performs tests to determine compliance. It fabricates or purchases standard and experimental types of prosthetic items such as artificial limbs, braces, orthopedic shoes, environmental control systems, mobility devices, etc., used in evaluations.

The center is responsible for the VA centralized orthopedic shoe program including the fabrication and repair of orthopedic shoes, overshoes and rubbers. They are also responsible for the centralized distribution of selected artificial limb components, e.g., hydraulic knee units, below-elbow myoelectric systems, electric elbows, special terminal devices, etc.

A Special Prosthetic Clinic Team operates at this center where difficult patient prosthetic problems are referred from all over the country. These referrals may come from any VA Medical Center or outpatient Clinic.

Information about these programs is disseminated by means of publications, conferences, workshops and other media.

Question No. 3: Why are your specially built shoes made only in New York? Wouldn't it be better to have this done locally?

Answer:

The availability of expertise in this area has always been on the eastern seaboard, especially in the New York and Massachusetts areas. The Veterans Administration Rehabilitation Engineering Center har facilities to store all lasts and patterns for special orthopedic shoes. To decentralize, the local VA Medical Centers would have to provide especially trained and skilled personnel and storage space to maintain the program. Most VAMCs would not have access to a local shoemaker because this is a rapidly disappearing craft. Because of lack of availability of such craftsmen and greater efficiency by centralization, it is less costly to continue to have VAREC serve this function.

Question No. 4: It is my understanding that your space in New York at 252 Seventh Avenue is in a very bad state of repair and has been for many years. If this is true, what are you doing about it?

Answer:

The space occupied by the Veterans Administration Rehabilitation Engineering Center (VAREC) at 252 Seventh Avenue is in an acceptable condition. Patient care areas are presentable and have been refurbished over the past few years. All patient care areas are in good condition. Construction has been nearly completed in the Prosthetics-Orthotics Service to insure better working conditions for employees in the shop. Machinery has been relocated in order to diminish the problem with dust. Some of the areas require repainting and requests have been initiated to accomplish this.

The most pressing needs of the entire building are air conditioning and inoperative elevators in the front of the building. GSA has been requested to correct these problems.

Question No. 5: Can you describe any recent breakthroughs you may have made in prosthetics in your research program?

Answer:

The advances in prosthetics over the past two years from the Rehabilitative Engineering Research and Development (RER&D) program are: the improved 4-Bar Linkage Knee; the Mauch Hydraulic Ankle; the Boeing Foot; and, the Light-Weight Polypropylene Prosthetics.

The function of each of these devices is briefly described as follows:

1. The improved 4-Bar Linkage Knee - This device is being evaluated at the VAMC, San Francisco, following its development by the University of California-Berkeley. The 4-Bar Linkage Knee, with pneumatic swing control, provides a more natural knee function in the following manner: a) restores the knee's natural function with a variable center of rotation (normally the point of rotation in the knee begins at the anterior portion of the distal condyle of the femur (condylus lateralis femoris) and moves slightly proximally and posteriorly as the knee flexs posteriorly; b) complete rante of motion from full extention to full flexion (tucked under as in squatting down); and, c) more cosmetically acceptable feature with a simulated patella and molded lower leg. This leg/knee combination is for more vigorous physical activity.

2. The Mauch Hydraulic Ankle developed by the Mauch Laboratories is being evaluated at several VAMCs. The Hydraulic Ankle offers several benefits for the physically active amputee, such as stability on uneven surfaces; and control of flexure under loading conditions.

3. The Boeing Foot being developed by the Boeing Technology Service is being evaluated at the VAMC, Seattle. The Boeing Foot utilizes a heel-to-toe leaf spring in an artificial foot to restore toe "spring" to produce a more natural gait than achieved with a solid keel artificial foot. This device is for the more physically active amputee.

4. This Light-Weight Polypropylene Lower Artificial Leg is being developed and evaluated by the Northwestern University. This device is a vacuum-formed hollow-shell which can be utilized when the weight and complexity of a standard prosthesis are too demanding.

In the past five years, the RER&D Service has sponsored a series of projects leading to new concepts in amputation surgery, particularly in the presence of peripheral vascular disease. The studies of particular significance in this area were conducted by: Ernest M. Burgess, M.D., Prosthetic Research Study, Seattle, WA; Wesley E. Moore, M.D., VAMC, Tucson, AZ (now VAMC, Wadsworth, CA); and, Bok Lee, M.D., VAMC, Castle Point, NY. Studies conducted by these nationally prominent clinician/researchers have demonstrated the value of the following amputation surgery concepts: oxygen monitoring and pulsital blood flow monitoring to determine most viable distal amputation site (preferably below-knee); immediate rigid dressing to reduce edema and contractures; early ambulation; and reduced hospitalization through intensive rehabilitation schedule.

Question #6 - Do you stock limbs and other devices or do you wait for specific orders for individual veterans?

Answer - Artificial Limbs are custom made appliances and cannot be stocked. However, various components used by commercial VA contractors are stocked and distributed by the VA Rehabilitation Engineering Center in New York, e.g., hydraulic knee units, below elbow myoelectric systems, electric elbows, immediate post surgical filling components, electric hands, etc. VA Orthotic Laboratories fabricate temporary limbs and stock the materials and components used in the fabrication of these prostheses. Centralized distribution programs also exist for stump socks, hearing aids, aids for the blind, hearing aid batteries and orthopedic software. Each medical center also stocks items for immediate issuance, e.g., wheelchairs, walkers, canes, crutches, bath seats, trapeze assemblies, grab bars, etc., depending on the needs of the patients at each medical center. All equipment issued at the Blind Rehabilitation Centers (BRC) is stocked by the Prosthetic Service at the medical center where the BRC is located. Beneficiary Service contracts are also used to provide for the expeditious delivery of larger items of medical equipment intended for home use, e.g., beds, patient lifts, commodes, shower chairs, etc.

Question No. 7: Do you experiment with patients? Please explain your procedures?

Answer:

The Rehabilitative Engineering Research and Development (RER&D) Service does not use patients for "experiments." The RER&D Service does seek patients to participate in the evaluation of new devices. The evaluations are conducted under the same conditions as any research in the VA. That is, all studies, even evaluation of devices, are reviewed and approved by the local R&D Committee and the Human Studies Committee. A careful procedure is followed for obtaining the patient's understanding and consent. The membership of the Human Studies Committee includes individuals from the local religious and lay community not associated with the VA. The Human Studies Committee reviews all proposals that have a human component involved in the research to assure that moral and ethical requirements are considered before any study is begun. No human studies can be conducted without this Committee's approval and this Committee can not be overruled. The Committee is also responsible for regular review and oversight of studies under progress to assure that investigators comply with the moral and ethical requirements.

Question No. 8: Do your doctors in this field belong to professional associations in which exchange of ideas and methods takes place?

Answer:

We have no data in central office listing professional society memberships of physicians in this field. However, we are confident that every clinical specialist belongs to a professional specialty organization.

All physicians employed by the Veterans Administration must be licensed by a state and most, if not all, states require continuing medical education to qualify for annual relicensure.

In addition, one criterion for renewal of board certification is receiving a specified number of continuing medical education (CME) credits. These CME credits are obtained through formal educational courses, workshops, and seminars that have been so designated (as CME) and approved by the appropriate professional society. The purpose of CME is to assure that board certified physicians maintain up-to-date knowledge and skills.

Question #9 - How do you pursue your program in your smaller hospitals?

Answer: When the prosthetic patient load is not large enough to justify the position of a prosthetic representative, a physician is designated by the Chief of Staff to be responsible for the overall Prosthetic Program. This physician is professionally responsible for supervision of the development of prescriptions for appliances, administrative evaluation of appliances prior to delivery to the veteran, condemning existing devices and repairs. The Chief of Medical Administration is responsible for the day-to-day administration of the program including the supervision of the prosthetic clerks or other clerical personnel responsible for the initiation of procurement actions. The Chief, Prosthetic Service (prosthetic representative) at the nearest medical center is responsible for providing technical and administrative guidance in the prosthetic clerks within their area of jurisdiction. He also attends and provides assistance at Prosthetic Clinic Team meetings held at these medical centers.

Patients who require treatment for amputations at VA Medical Centers which do not have a Prosthetic Clinic Team are referred to the nearest VA Medical Center with such a team. This team then becomes responsible for the development of an appropriate prescription and the eventual check out of the prosthesis. Patients requiring temporary limbs or other prosthetic/orthotic devices are routinely referred to the nearest VA Orthotic Laboratory. In some isolated instances, we are dependent upon local commercial resources for these services. Other prosthetic appliances or devices are prescribed by the patient's ward physician, or a physician in the outpatient clinic, and ordered by the prosthetic clerks from approved sources.

Question #10 - Do you have all the contract authority you need for the prosthetic program?

Answer - The broadest authority possible exists for the procurement of prosthetic devices. Title 38 USC, Section 5023 reads as follows:

> "The Administrator may procure prosthetic appliances and necessary services required in the fitting, supplying, and training and use of prosthetic appliances by purchase, manufacturer, contract, or in such other manner as the Administrator may determine to be proper, without regard to any other provision of law."

All contracts relating to the Prosthetic Program are reviewed with Supply Service Officials prior to the issuance of the solicitation.

Question No. 11: Could you list for us and briefly describe the research contracts that the VA has with educational institutions?

Answer:

The attached list identifies and describes the R&D contracts the Rehabilitative Engineering Research and Development (RER&D) Service funds as an integral portion of the overall program. Note that many of these contracts are for engineering support of intramural studies. The projects are listed in the order that was presented on the list of funded projects previously provided to the Committee.

Title: Evaluation of Peripheral Vascular Disease by a Real-Time Multi-spectral Imaging System.

Principal Investigator: ADEY, Ross, M.D.

Contractor: California Institute of Technology/Jet Propulsion Laboratories
Pasadena, CA.

Synopsis: This contract is to redirect a NASA developed multi-spectral imaging system to study the effects of peripheral vascular disease that leads to amputation. The clinical trials will be under the supervision of VA physicians in the VA Medical Center, Loma Linda, California.

Funding: FY 81 - $36,160

Title: Transcutaneous Oxygen Tension as a Predictor of Wound Healing.

Principal Investigator: MATSEN, F. U., M.D.

Contractor: University of Washington
Limb Viability Lab
Seattle, Washington

Synopsis: This project has two primary elements; first, the study of Transcutaneous Oxygen Tension ($TCPO_2$) as a predictor of limb viability, and second, the utilization of $TCPO_2$ as a predictor of wound healing in amputation. The former is a study in preventive techniques to avoid amputation in the presense of peripheral vascular disease. The latter is a study to determine the value of $TCPO_2$ as an adjunctive diagnostic procedure when amputation appears to be necessary.

Funding: FY 81 - $100,666

Title: Sonic and Radioisotopic Assessment of Fracture Healing in Dogs and Humans.

Principal Investigator: Jacobs, Rae, M.D.

Contractor: Kansas University
School of Engineering
Lawerence, Kansas

Synopsis: This project is to study the mechanisms of bone healing by measuring the rate of healing process in dogs by a radioisotopic technique. A concurrent study will determine if an ultrasonic technique can accomplish this measurement non-invasively. The development of the ultrasonic technique is being conducted on contract to the Kansas University, School of Engineering as a small part of the overall effort.

Funding: FY 81 - $90,085 (contract portion = $35,000)

1. Title: The Efficacy of Surgical and Rehabilitative Procedures of the Knee.

Principal Investigator: WEBER, Edward, M.D.

Contractor: University of Arkansas
Graduate Institute of Technology
Little Rock, Arkansas

Synopsis: This project studies the rotational and bending forces about the knee. The project uses cadaver knees as a work model on which certain surgical procedures are measured and evaluated using special instrumentation developed by the University of Arkansas. The University portion of the project is a small segment of the overall project.

Funding: FY 81 - $73,067 (contract portion = $26,000)

2. Title: In-vivo Loading on the Knee Joint Replacement.

Principal Investigator: BROWN, R. M., Ph.D.

Contractor: Case Western Reserve University
Department of Orthopedic Surgery
Cleveland, Ohio

Synopsis: This project is studying the loading factors on the knee joint replacements. Artificial joints must be replaced at regular intervals due to loosening of the prosthesis or failure of the artificial components. This project will study the loading (stress, strain and rotation forces) on artificial knee during actual use in order to determine the causes of failure and to improve the design factors.

Funding: FY 81 - $149,409

Title: Development of Hindfoot Joint Resurfacing Prostheses

Principal Investigator: SAMUELSON, Kent, Ph.D.

Contractor: University of Utah, Salt Lake City, UT

Synopsis: This contract is to study the etiology of degenerative joint disease in the foot and ankle leading to loss of motion within the ankle and foot joints. This study is to concentrate particularly on the ankle joint and determine if surgical and biomechanical techniques can be used to improve or recover joint surfaces normally destroyed in the course of this disease.

Funding: FY 81 = $61,111

Title: Development of Replacement Ligaments and Tendons Using Polylactic Acid - Filamentous Carbon Composites.

Principal Investigator: WEISS, Andrew, M.D.

Contractor: New Jersey Medical and Rutgers University
East Orange, NJ

Synopsis: This contract is to study new composite materials to determine if they are suitable replacements for ligaments and tendons in the human body. The first phase of this project is a biomechanical study of the properties of several of these new composite materials. The second phase of this study will be to conduct implant studies in animals using the most promising material from the first phase. Any follow up studies in this program will be dependent upon the successful achievement of these two.

Funding: FY 81 - $32,981

Title: Orthopedic Implant Device Retrieval and Analysis - A Pilot Study.

Principal Investigator: WEINSTEIN, A., Ph.D.

Contractor: Tulane University
School of Engineering
New Orleans, LA

Synopsis: This project conducts a multi-hospital study of the mechanical and physical properties of orthopedic implant devices, such as, bone nails, screws, plates, and artificial joints. If a failure has occurred the failure mechanism is studied. The study is to improve the clinical utility of these devices; no attempt is made to design actual devices, just gather and analyze the data. A small portion of the project at the VAMC supports two graduate students from the Engineering School in conducting the analysis.

Funding: FY 81 - $123,986 (contract portion=$22,000)

Title: Foot Biomechanics - Force and Pressure Distribution in Health and Disease.

Principal Investigator: COOPER, R. A., M.D.

Contractor: University of Iowa
School of Engineering
Iowa City, Iowa

Synopsis: This project is studying the effect of external forces and pressures on the foot that lead to amputation of the toes or foot. The primary work is conducted at the Orthopedic Biomechanics Lab at the University with an engineering graduate student. The project has developed a mathematical model of the pressures and forces and has designed a pressure transducer to measure actual forces to complete the model.

Funding: FY 81 - $57,793 (contract portion = $36,000)

Title: Identification of Fatigue by EMG Power Spectrum Analysis.

Principal Investigator: MOONEY, Vert, M.D. and JONES, R., M.D.

Contractor: University of Texas - Arlington
School of Engineering
Arlington, TX

Synopsis: This project is studying an objective measurement of myoelectric (EMG) activity while the muscles are performing functional work that can be non-invasive. Analysis of the muscle work potential (tendency toward fatigue) of specific musculature offers a significant tool in planning, evaluating and achieving effective rehabilitation procedures. The University contract portion is for the development of the power spectrum analysis technique, and represents only a portion of the total project.

Funding: FY 81 - $51,197 (contract portion = $32,500)

Title: Engineering Application in Orthotic and Prosthetic Treatment of Musculoskeletal Defects.

Principal Investigator: MARSOLAIS, E. B., M.D.

Contractor: Case Western Reserve University
School of Engineering
Cleveland, Ohio

Synopsis: This project is applying engineering principals to fitting and utilization of orthoses and prostheses in the treatment of musculoskeletal defects. The project is divided into 4 distinct sections: an automated 3-D motion and force analysis system (SELSPOT); quantification of musculoskeletal defects with a foot plate system; functional electrical stimulation to augment lower extremity function; and, evaluate the value of biofeedback in improving gait. The function of this laboratory is primarily gait analysis, applied to several different areas. One small portion, the SELSPOT system, has a contract for a graduate student to perform some of the complex analysis of the data.

Funding: FY 81 - $144,077 (contract portion = $25,000)

Title: Orthopedic Rehabilitative Engineering Project

Principal Investigator: HOAGLUND, Frank, M.D.

Contractor: University of California/Berkeley, CA.

Synopsis: This contract is to develop improved artificial limbs; new concepts in wheelchairs, and study human locomotion through new and improved techniques in Gait Analysis. This contract has provided many innovations in prosthetic appliances that have had a major impact in this field. Their current artificial limb is being evaluated in the VA Medical Center, San Francisco, CA. The Gait Analysis Laboratory has been moved into the VA Medical Center.

Funding: FY 81 = $121,248

Title: Evaluation of Physiological Suspension Factors in Below Knee Amputees.

Principal Investigator: LIPPERT, F. U., M.D.

Contractor: University of Washington
School of Engineering
Seattle, Washington

Synopsis: This project is studying the role of the residual limb muscle activity as a means of providing better prosthetic suspension with increased function capability on the part of the below knee amputee. The goals are to provide: improved surgical techniques; improved stump muscle training; improved prosthetic fittings, and more functional capability and comfort by amputees. The Engineering School contract provides for photogrammetry measurement and analysis techniques of measuring stump volume and the prosthesis/ stump interface.

Funding: FY 81 - $88,596 (contract portion = $45,000)

Title: Limb Prosthetics Research

Principal Investigator: CHILDRESS, Dudley, Ph.D.

Contractor: Northwestern University
Chicago, Illinois

Synopsis: This contract is to develop several new prosthesis and to develop improved fitting techniques for new prosthesis. The Northwestern University is continuing to study the myoelectric powered upper limb. This is a battery driven "hand" which is activated by sensing muscle potential in the shoulder of the amputee. They are also studying the use of an interchangeable powered hook for doing heavy labor. In the fitting phase of the program they are studying improved fitting with lightweight prosthesis for the elderly.

Funding: FY 81 - $182,047

Title: Pilot Projects in Rehabilitative Engineering Research and Development.

Principal Investigator: KOLODNER, Robert, M.D. and KELLY G.

Contractor: Georgia Institute of Technology
Atlanta, GA

Synopsis: This contract is to fund 5 pilot projects being conducted at the Georgia Institute of Technology. Four of the projects are assistive devices for the blind and the fifth is a wheelchair with an anti-roll back mechanism built into the hub. The assistive devices for the blind range from a training typewriter for the blind that gives verbal feedback to a locator system that will find bathrooms or elevators in public areas. The device development and fabrication is taking place at the Georgia Institute of Technology and the patient evaluation phase will take place at the VAMC, Atlanta, GA.

Funding: FY 81 - $188,000

Title: Seating Systems for Body Support and Prevention of Tissue Trauma

Principal Investigator: PERKASH, Inder, M.D.

Contractor: Stanford University, Children's Hospital, Palo Alto, CA

Synopsis: This contract is to study the causes of pressure sores in conventional wheelchair seats and develop new seating systems to reduce the occurrence of pressure sores in spinal cord injured patients. Current figures indicate that it costs $40,000 to heal a pressure sore once it occurs. Studies indicate that improved seating techniques, that, is seating which reduces tissue trauma over the buttocks, can significantly reduce incidents of this injury. The analytical studies and fabrication of prototype seating systems is conducted at the Children's Hospital, while the evaluation is conducted on patients at the Spinal Cord Injury Center in the VA Medical Center, Palo Alto, California.

Funding: FY 81 - $64,235

Title: Assistive Powered Devices for the High Spinal Cord Injured Person - I. Wheelchair Control Systems. II. Research on Robotic Arm/Worktable System.

Principal Investigator: SCHMEISSER, Gerhard

Contractor: Department of Defense Interagency Agreement
Johns Hopkins University/Applied Physics Laboratory
Laurel, MD

Synopsis: This contract has two distinct phases. The first is to develop new systems for Powered Wheelchair Control. One system presently being evaluated is a new chin controller. Another system is a Powered Assisted Wheelchair, which is a cross between a manually propelled wheelchair and a electrically powered wheelchair. With this wheelchair a handicapped person can provide their own energy (for exercise) to propel the chair until more power is needed. For example, to climb a ramp than the electrical over-ride can provide that power. The second phase of this project is to develop a robotic arm/work station which will allow a totally paralyzed person to feed themselves and perform other tasks of daily living. This system has a robotic arm controlled by a mini-computer which performs preprogrammed tasks for the handicapped person. The handicapped person can select the task they want performed with a special controller.

Funding: FY 81 - $115,800

Title: Development of Robotic Aids for the Severely Handicapped.

Principal Investigator: LEIFER, Larry, Ph.D.

Contractor: Stanford University, Palo Alto, CA

Synopsis: This contract is to use the resources of the industrial design department at Stanford University to adapt an industrial model robot to use as a "living aid" for a totally handicapped person, such as a quadrapegic who is paralyzed from the neck down. The mechanical design and fabrication is taking place at Stanford University, however, the preliminary clinical studies are being conducted at the Spinal Cord Injury Center, VAMC Center, Palo Alto, California.

Funding: FY 81 = $ 96,000

Title: Ultrasonic Bladder Volume Measurement for Spinal Cord Injury.

Principal Investigator: ROEMER, R.B., Ph.D.

Contractor: University of Arizona
School of Engineering
Tucson, Arizona

Synopsis: This project is to develop an ultrasonic bladder volume measurement system for spinal cord injured persons. This device would be smaller, and less expensive than commercial ultrasonic equipment. It would allow the technicians, and eventually the patient, to determine when the bladder needs emptying. A spinal cord injured person loses this sensation; the resultant renal infections are the leading cause of deaths in SCI. The primary effort is being conducted by the engineering school.

Funding: FY 81 - $71,465

Title: The Effect of Auditory Cues in Computer - Assisted Instructions.

Principal Investigator: KOPRA, Lennart, Ph.D.

Contractor: University of Texas
Communications Science Center
Austin, TX

Synopsis: This project is studying the effectiveness of computer-assisted instruction as a supplementary procedure for drill and practice in a program of lipreading instruction for post-lingually hearing impaired adults. The VA provides such lip-reading drills and practice to VA beneficiaries suffering hearing loss aggravated by trauma and age. The study will determine if this technique improves communication and speech intelligibility.

Funding: FY 81 - $99,731

Title:	Development and Evaluation of an Infrared Light Transmission Master Hearing Aid.
Principal Investigator:	KOORMAN, Charles, M.D.
Contractor:	Arizona State University Temple, Arizona
Synopsis:	This project is to develop an infrared light transmission hearing aid to determine if this approach can be used to reduce acoustic reverberation and noise problems in the standard hearing aid. This approach has been limited by technology costs. However, recent advances in microcircuits now make this a feasible consideration. Thus, the project will contract with the University to develop a series of prototypes to be evaluated at the VAMC, Tucson.
Funding:	FY 81 - $89,390

Title:	Cooperative Studies with the Rehabilitative Engineering Research and Development Center.
Principal Investigator:	LEIFER, Larry, Ph.D.
Contractor:	Stanford University, Palo Alto, CA
Synopsis:	This project is for 12 individual pilot projects being conducted by graduate students at Stanford University in the RER&D Center at Palo Alto, CA. These projects are to develop prototype devices to assist the physically handicapped in activities of daily living. These projects range from omni-directional wheelchair which has a totally new concept of rotation using wheels within wheels, to simple devices such as feeding utensils for stroke patients or pick up devices for paralyzed patients. The designed and fabrication phases to these projects are conducted at Stanford University, while the clinical evaluation is conducted at the VAMC, Palo Alto, CA.
Funding:	FY 81 = $211,000

Title: The Effects of Mechanical Pressure on Human Tissue.

Principal Investigator: MOONEY, Vert, M.D.

Contractor: Southwest Texas Medical School
Dallas Rehabilitation Institute
Dallas, TX

Synopsis: This project was a workshop to determine the state-of-the-art in pressure sores and to set new goals for pressure sore studies. The proceedings and recommendations of this workshop were published to encourage the widespread distribution of these data. The treatment of a pressure sore costs $40,000 per episode. Pressure sores are common on SCI and other bed-ridden patients. Pressure sores can be prevented with proper care.

Funding: FY 81 - $22,535

Title: The Principals of Spinal Stability.

Principal Investigator: FISK, J. C., M.D.

Contractor: Loyola University
Continiuing Medical Education Division
Chicago, Illinois

Synopsis: This project was a workshop on the medical and engineering principals of stabilizing the bony spine. The mechanical stabilization of the spine following injury can reduce the attendant care and the length of the hospital stay in the acute phase of SCI. The proceedings were published for wider dissemination.

Funding: FY 81 - $30,430

Title: Research in Hearing Impairment; Amplification Needs.

Principal Investigator: BESS, F. U., Ph.D.

Contractor: Vanderbilt University
Wilkerson Speech and Hearing Center
Nashville, TN

Synopsis: This project was a workshop on the state-of-the-art in hearing aids and to determine future research goals. Hearing loss is the single largest disability category in the VA. The commercial hearing aid has many inherent problems. This workshop was to discuss the limitations on available aids and to make recommendations on future needs. The proceedings of this workshop will be published for wider dissemination.

Funding: FY 81 - $37,997

Title: Microsurgical Techniques Applied to Orthopedic Hand Surgery.

Principal Investigator: SHAFFER, J. W., M.D.

Contractor: Case Western Reserve University
Orthopedic Engineering Laboratory
Cleveland, OH

Synopsis: This project is studying the efficacy of utilizing vascularized bone segments as the donor bone in reconstructive surgery of the hand. Other studies indicate non-vascularized bone does not provide the strength the original bone had. The hypothesis of this study is to determine if the vascularized bone produces a strong bone replacement. The study is being conducted on dogs. A portion of the overall study is with the Orthopedics Engineering Laboratory, who will develop a standardized bone strength test to measure the bone transplant samples produced in this study.

Funding: FY 81 - $44,721 (contract portion = $26,208)

Title: Development and Evaluation of a New Artificial Larnyx.

Principal Investigator: GOLDSTEIN, L. P. Ph.D.

Contractor:
University of Florida
Department of Mechanical Engineering
Gainesville, Florida

Synopsis: This project is to develop a neck-mounted artificial larnyx of the electro-vibratory type. This device would be utilized by the laryngectomees who cannot utilize the air by-pass artificial larnyx. The device under evaluation is capable of pitch and tone changes. A portion of this study is a contract to the University of Florida, School of Engineering, to design and fabricate the prototype devices that will be evaluated at the VAMC.

Funding: FY 81 = $63,207 (contract portion = $32,000).

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